



# ***Search Report***

## ***EIC 1700***

**STIC Database Tracking Number: 238755**

**To: GREGORY LISTVOYB**

**Location: REM-10D60**

**Art Unit: 1711**

**Wednesday, October 03, 2007**

**Case Serial Number: 10/525671**

**From: USHA SHRESTHA**

**Location: EIC1700**

**REM-4B28 / REM-4B31**

**Phone: (571)272-3519**

**[usha.shrestha@uspto.gov](mailto:usha.shrestha@uspto.gov)**

### **Search Notes**

**Examiner LISTVOYB:**

Please see the search results, feel free to contact me if you have any questions or if you like to refine the search query. Thank you for using STIC services!

Regards,  
Usha

Access DB# 238755

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Gregory Listovsky Examiner #: 93146 Date: 9/28/2007  
Art Unit: 1711 Phone Number 30 26105 Serial Number: 101525 671  
Mail Box and Bldg/Room Location: R10860 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Ctr.

Inventors (please provide full names): \_\_\_\_\_

SEP 28 2007

Pat. & T.M. Office

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Clm 1-3

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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International Bureau



(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
WO 2004/090017 A1

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C07D 251/00, G02F 1/1337

(21) International Application Number:  
PCT/KR2004/000102

(22) International Filing Date: 20 January 2004 (20.01.2004)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2003-0022261 9 April 2003 (09.04.2003) KR

(71) Applicant (for all designated States except US): CHEIL  
INDUSTRIES INC. [KR/KR]; Kongdan-Dong 290,  
Kumi-Shi, Gyeongsangbuk-Do 730-030 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): OH, Jae Min  
[KR/KR]; Poonglim Apt. 418-1801, Jungja-Dong,  
Jangan-Gu, Suwon-Shi, Kyonggi-Do 440-300 (KR).  
LEE, Bum Jin [KR/KR]; 73-3, Jeongja-Dong, Bun-  
dang-Gu, Seongnam-Shi, Kyonggi-Do 463-811 (KR).  
LEE, Moo Young [KR/KR]; Daerin Apt. 110-801,  
Moojigae Maeul, Gunpo-2 Dong, Gunpo-Shi, Ky-  
ounggi-Do 435-771 (KR). KWON, O Bum [KR/KR];

27-55, Wonhyoro 1st Street, Yongsan-Gu, Seoul 140-846  
(KR). OH, Joon Suk [KR/KR]; Yulkok Apt. 341-1403,  
Okeum-Dong, Kunpo-Shi, Kyonggi-Do 435-757 (KR).  
PARK, Dong Won [KR/KR]; Olympic Family Apt.  
202-1003, Munjeong-Dong, Songpa-Gu, Seoul 138-200  
(KR). KIM, Chul Hee [KR/KR]; Cheonggu Apt. 210-105,  
Yangji-Maul, Sunae-Dong, Bundang-Gu, Seongnam-Shi,  
Kyonggi-Do 463-921 (KR).

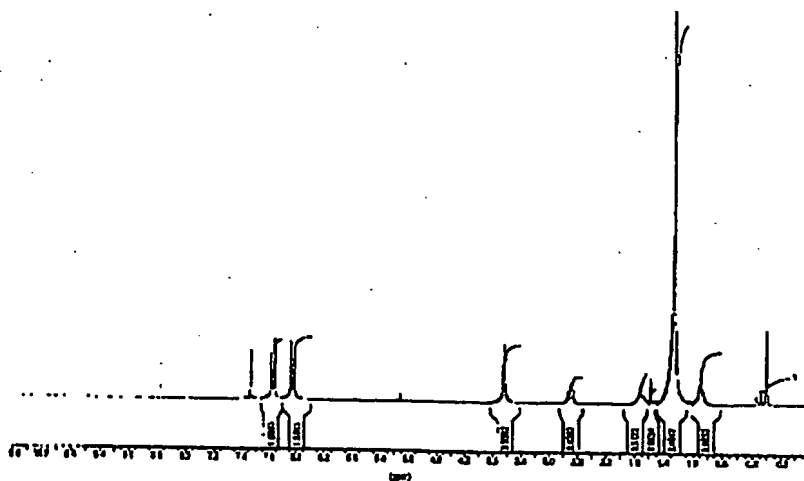
(74) Agents: KIM, Hak, Je et al.; Phoenix International Patent  
and Law Office, Kwangwhamoon P.O. Box 1828, Seoul  
110-618 (KR).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

[Continued on next page]

(54) Title: DIAMINE COMPOUND CONTAINING TRIAZINE GROUP, POLYAMIC ACID SYNTHESIZED FROM THE DI-  
AMINE COMPOUND AND LC ALIGNMENT FILM PREPARED FROM THE POLYAMIC ACID



(57) Abstract: Diamine compound containing specific triazine group, polyamic acid obtained by reacting the diamine compound and tetracarboxylic dianhydride, and liquid crystal alignment film obtained by coating and imidizing the polyamic acid. The liquid crystal alignment film has good heat-resistance, high transparency in visible light region and improved voltage holding ratio. Also, pretilt angle is easily controlled over broad range.

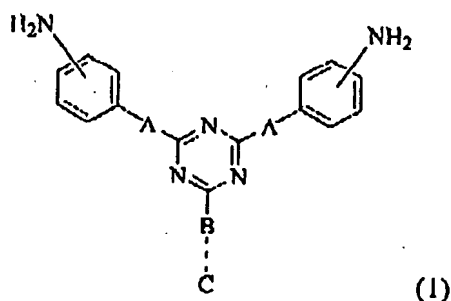
WO 2004/090017 A1

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AUG 30 2007

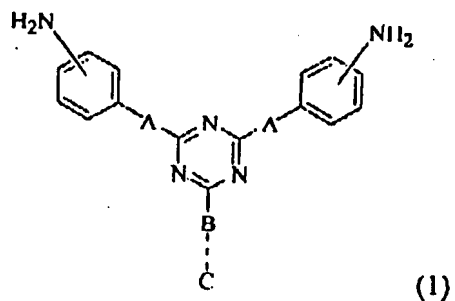
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A diamine compound containing a triazine moiety, represented...  
by Formula 1 below:



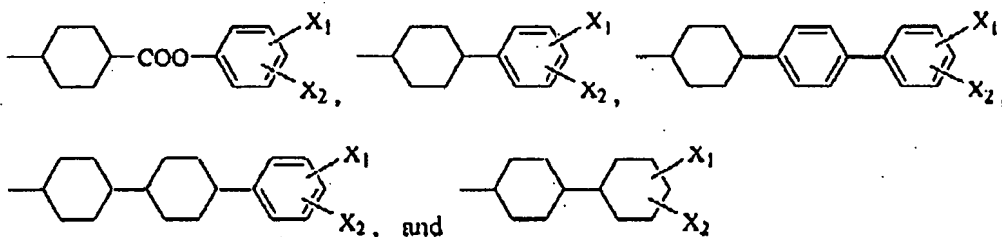
wherein A is -O- or -COO-; B is -O-, -COO-, -CONH- or -OCO-; and C is a C<sub>1-30</sub> linear, branched or cyclic monovalent organic group, or combination thereof[.]; or  
wherein A is -COO-, B is a direct bond, and C is a C<sub>1-30</sub> linear, branched or cyclic monovalent organic group, or combination thereof.

2. (Previously Presented) A diamine compound containing a triazine moiety,  
represented by Formula 1 below:



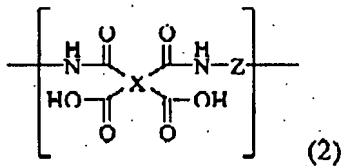
wherein A is -O- or -COO-; B is a direct bond; and C is a C<sub>1-30</sub> linear or branched

aliphatic hydrocarbon group, a saturated cyclic hydrocarbon group, or a fused saturated or unsaturated cyclic hydrocarbon group which is unsubstituted or substituted with at least one group selected from the group consisting of -H, -CH<sub>3</sub>, -CF<sub>3</sub>, -F, -Br, -Cl, -CN, -OH and -NO<sub>2</sub>; or a group selected from the following groups:



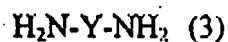
wherein X<sub>1</sub> and X<sub>2</sub> are each independently -H, -CH<sub>3</sub>, -CF<sub>3</sub>, -F, -Br, -Cl, -CN, -OH, or -NO<sub>2</sub>.

3. (Previously Presented) A polyamic acid prepared by reacting a diamine component (a) and an acid dianhydride (b), the diamine component including 0.1 molc% or above of the diamine compound according to claim 1 or 2 based on 100 mole% of the diamine component, and the polyamic acid having a repeating unit represented by Formula 2 below:

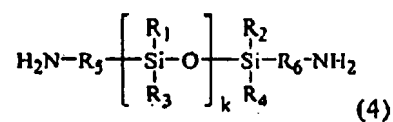


wherein x is a tetravalent aromatic or alicyclic organic group, and z is a divalent organic group originating from the diamine compound of Formula 1.

4. (Original) The polyamic acid according to claim 3, wherein the diamine component (a) further includes an aromatic diamine compound and a polysiloxane-based diamine compound represented by Formulae 3 and 4 below, respectively:

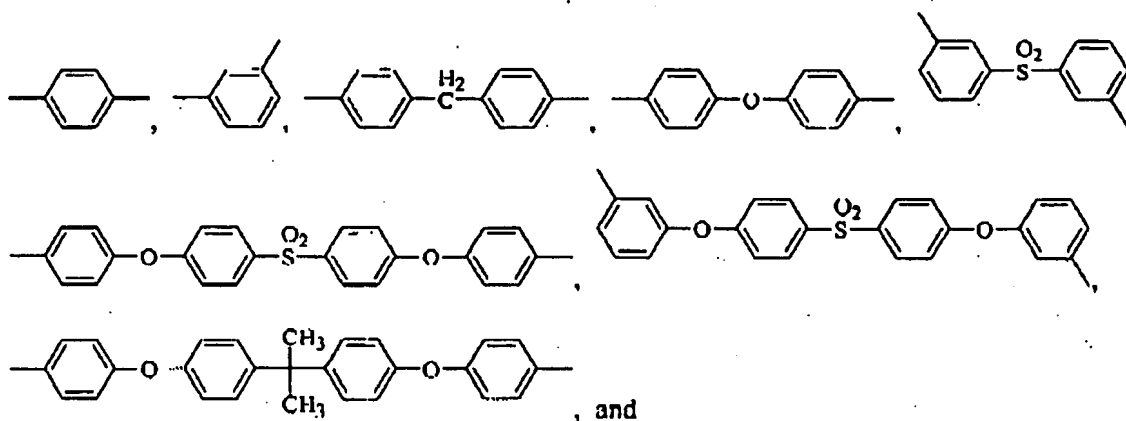


wherein Y is a divalent aromatic organic group,



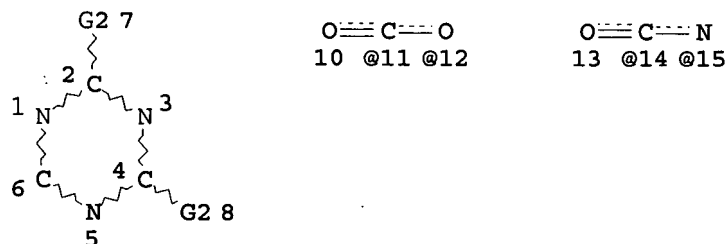
wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently a C<sub>1-10</sub> alkyl, alkoxy or aryl group, and R<sub>5</sub> and R<sub>6</sub> are each independently a C<sub>1-10</sub> alkylene group.

5. (Original) The polyamic acid according to claim 4, wherein the substituent Y in Formula 3 is a divalent organic group selected from the group consisting of the following groups:-



=&gt; d que 121

L11 STR



VAR G2=O/11/14/15/12

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DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

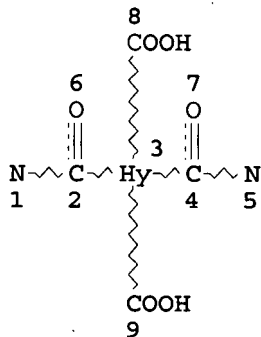
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NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L13 37485 SEA FILE=REGISTRY SSS FUL L11

L19 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

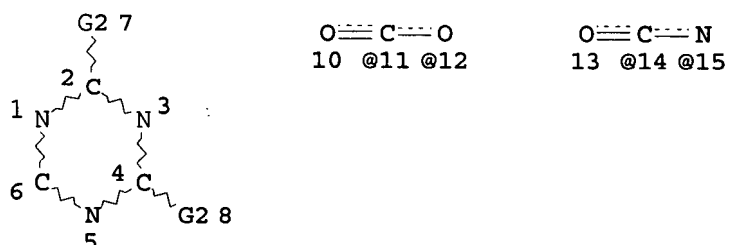
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STEREO ATTRIBUTES: NONE

L21 0 SEA FILE=REGISTRY SUB=L13 SSS FUL L19

=&gt; d que 122

L11 STR



VAR G2=O/11/14/15/12

NODE ATTRIBUTES:

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DEFAULT ECLEVEL IS LIMITED

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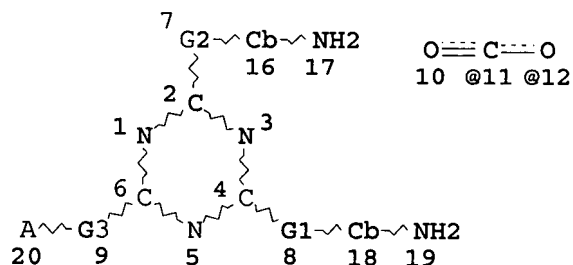
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NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L13 37485 SEA FILE=REGISTRY SSS FUL L11

L15 STR



VAR G1=11-4 12-18/12-4 11-18/O

VAR G2=O/11-2 12-16/12-2 11-16

REP G3=(0-10) A

NODE ATTRIBUTES:

NSPEC IS RC AT 20

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

L17 67 SEA FILE=REGISTRY SUB=L13 SSS FUL L15

L22 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L17

=> d l22 1-18 ibib ed abs hitstr hitind

L22 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:657180 HCAPLUS

DOCUMENT NUMBER: 145:134315

TITLE: Composition for LC alignment film using diamine having side chain

INVENTOR(S): Oh, Jae Min; Kwon, O. Bum; Dong, Won Seok; Lee,



PATENT ASSIGNEE(S): Bum Jin; Kim, Jong Seob  
 SOURCE: S. Korea  
 U.S. Pat. Appl. Publ., 14 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006147651	A1	20060706	US 2005-219046	20050901
KR 2006078789	A	20060705	KR 2004-118125	20041231
JP 2006188485	A	20060720	JP 2005-252908	20050831
CN 1927845	A	20070314	CN 2005-10098322	20050907
PRIORITY APPLN. INFO.:			KR 2004-118125	A 20041231

OTHER SOURCE(S): MARPAT 145:134315

ED Entered STN: 07 Jul 2006

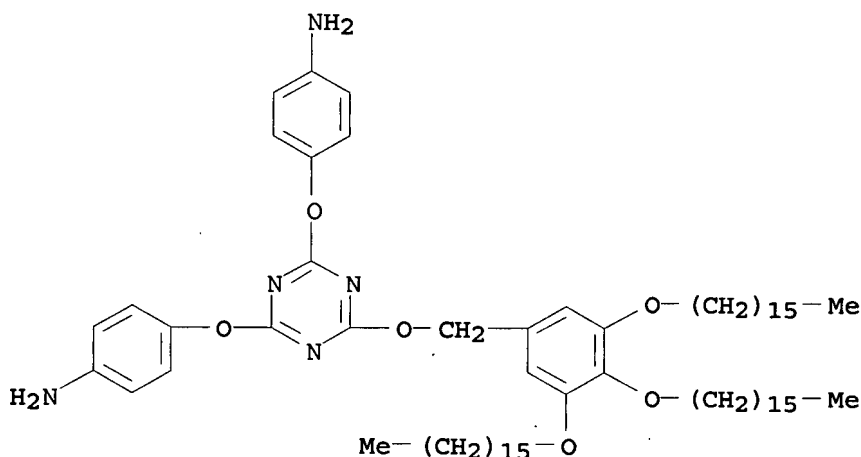
AB Disclosed herein is an LC aligning agent using diamine having side chains. In detail, the present invention relates to a composition for an LC alignment film which employs diamine having side chains to produce polyamic acid, followed by imidization. When the LC alignment film is applied to a liquid crystal display device, high heat resistance, high penetration in a visible ray range, excellent alignment, and a high voltage holding ratio are assured. Even though it contains a small amount of functional diamine, a high pretilt angle can be assured. Thus, the pretilt angle is easily controlled and a vertical aligning force is improved.

IT 897034-18-3P

(preparation of composition for lc alignment film)

RN 897034-18-3 HCAPLUS

CN Benzenamine, 4,4'-[[6-[[3,4,5-tris(hexadecyloxy)phenyl]methoxy]-1,3,5-triazine-2,4-diyl]bis(oxy)]bis- (9CI) (CA INDEX NAME)



IT 897034-19-4P 897034-21-8P

(preparation of polyamic acid for lc alignment film)

RN 897034-19-4 HCAPLUS

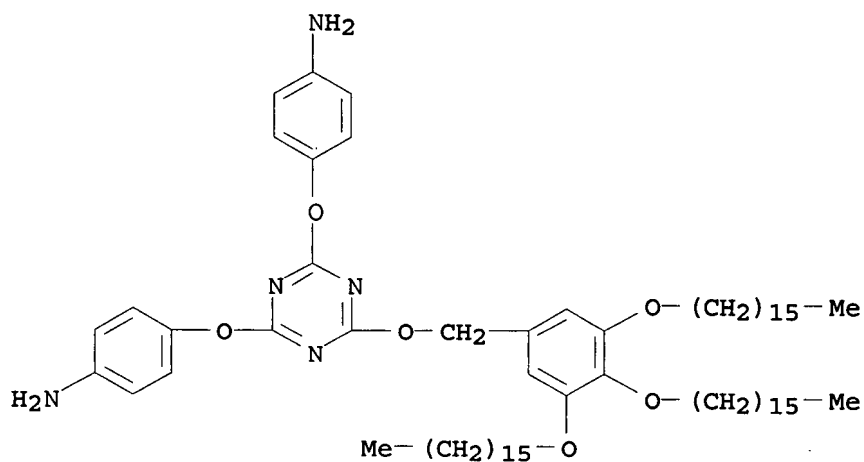
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 3a,4,5,9b-tetrahydro-6-(tetrahydro-2,5-dioxo-3-furanyl)naphtho[1,2-c]furan-1,3-dione, 4,4'-methylenebis[benzenamine] and

4,4'-[[6-[[3,4,5-tris(hexadecyloxy)phenyl]methoxy]-1,3,5-triazine-2,4-diyl]bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

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CRN 897034-18-3

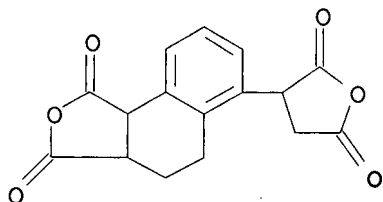
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CM 2

CRN 896115-22-3

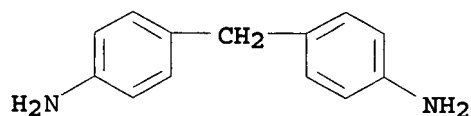
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CM 3

CRN 101-77-9

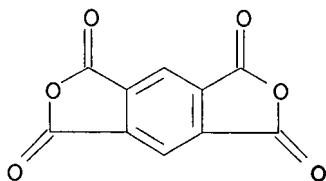
CMF C13 H14 N2



CM 4

CRN 89-32-7

CMF C10 H2 O6



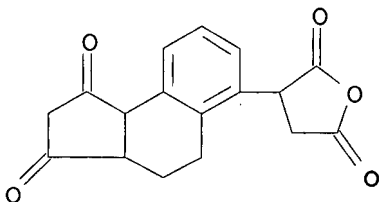
RN 897034-21-8 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
 3-(2,3,3a,4,5,9b-hexahydro-1,3-dioxo-1H-benz[e]inden-6-yl) dihydro-2,5-  
 furandione, 4,4'-methylenebis[benzenamine], tetrahydrocyclobuta[1,2-  
 c:3,4-c']difurantetrone and 4,4'-[[6-[[3,4,5-  
 tris(hexadecyloxy)phenyl]methoxy]-1,3,5-triazine-2,4-  
 diyl]bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 897034-20-7

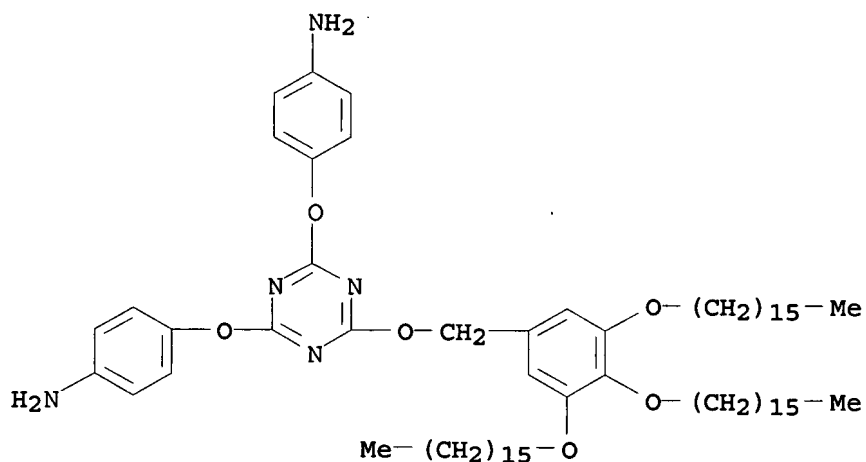
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CM 2

CRN 897034-18-3

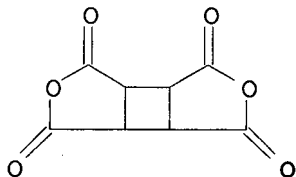
CMF C70 H115 N5 O6



CM 3

CRN 4415-87-6

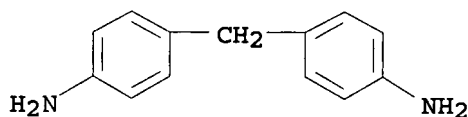
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CM 4

CRN 101-77-9

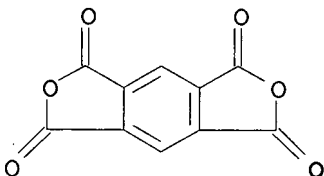
CMF C13 H14 N2



CM 5

CRN 89-32-7

CMF C10 H2 O6



INCL 428001200

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

IT 897034-18-3P

(preparation of composition for lc alignment film)

IT 897034-19-4P 897034-21-8P

(preparation of polyamic acid for lc alignment film)

L22 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1310822 HCAPLUS

DOCUMENT NUMBER: 144:37190

TITLE: Photosensitive polymer-containing adhesive compositions with suppressed flowability, and their sheets

INVENTOR(S): Don, Chon Shin; Byon, Won Kan

PATENT ASSIGNEE(S): Lg Cable Ltd., S. Korea

SOURCE: Jpn. Kokai Tokkyo Koho, 112 pp.

DOCUMENT TYPE: CODEN: JKXXAF  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: Japanese  
 PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005344096	A	20051215	JP 2004-240798	20040820
KR 2005115018	A	20051207	KR 2004-40244	20040603
KR 2005115394	A	20051207	KR 2004-40245	20040603
KR 2005115019	A	20051207	KR 2004-40246	20040603
KR 2005115395	A	20051207	KR 2004-40247	20040603
KR 2005115396	A	20051207	KR 2004-40248	20040603
KR 2005116767	A	20051213	KR 2004-41997	20040608
CN 1704457	A	20051207	CN 2004-10085275	20041018
PRIORITY APPLN. INFO.:			KR 2004-40244	A 20040603
			KR 2004-40245	A 20040603
			KR 2004-40246	A 20040603
			KR 2004-40247	A 20040603
			KR 2004-40248	A 20040603
			KR 2004-41997	A 20040608

ED Entered STN: 16 Dec 2005

AB The compns. contain curable adhesive components and photosensitive polymer thickening agent precursors having photocrosslinkable side chains. Thus, a composition containing an epoxy resin and a photosensitive polymer prepared from cinnamoyl- and dichloro-containing triazine and hydroquinone was applied on a polyester film, dried, irradiated with UV, and laminated with a polyethylene protective film to give an adhesive sheet showing good heat resistance and dimensional stability.

IT 528881-46-1P 528881-48-3P 528881-51-8P

528881-52-9P 528881-53-0P 870278-63-0P

(photosensitive polymer-containing adhesive compns. with suppressed flowability for adhesive sheets)

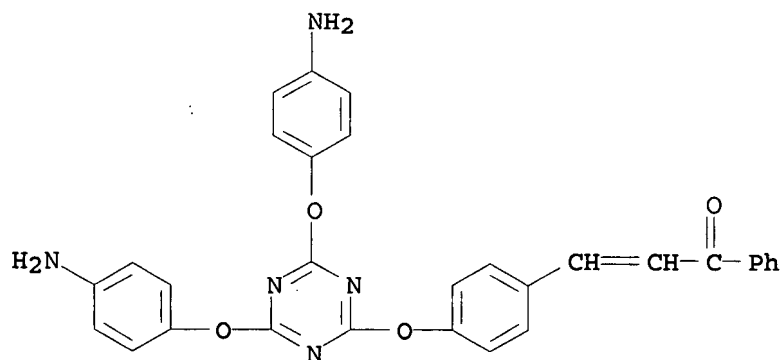
RN 528881-46-1 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl-2-propen-1-one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-38-1

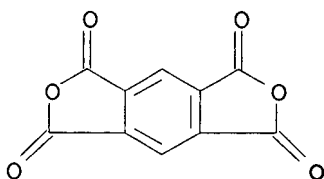
CMF C30 H23 N5 O4



CM 2

CRN 89-32-7

CMF C10 H2 O6



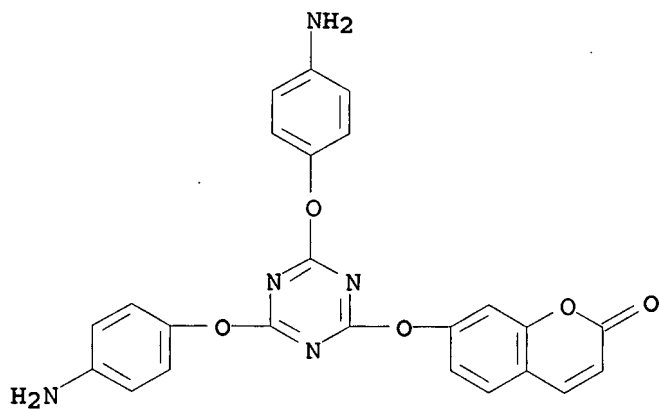
RN 528881-48-3 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-  
one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6

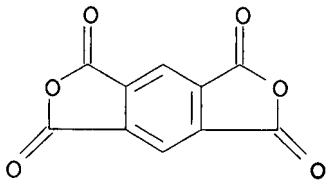
CMF C24 H17 N5 O5



CM 2

CRN 89-32-7

CMF C10 H2 O6



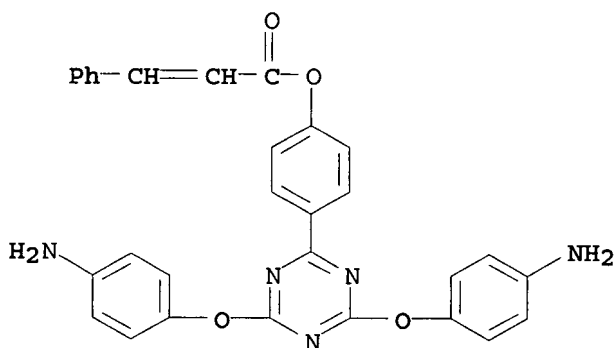
RN 528881-51-8 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phenyl ester, polymer with 1,4-benzenedicarbonyl dichloride and 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 528881-34-7

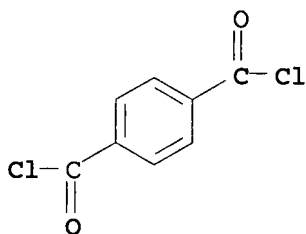
CMF C30 H23 N5 O4



CM 2

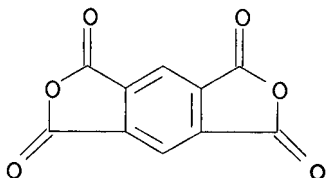
CRN 100-20-9

CMF C8 H4 Cl2 O2



CM 3

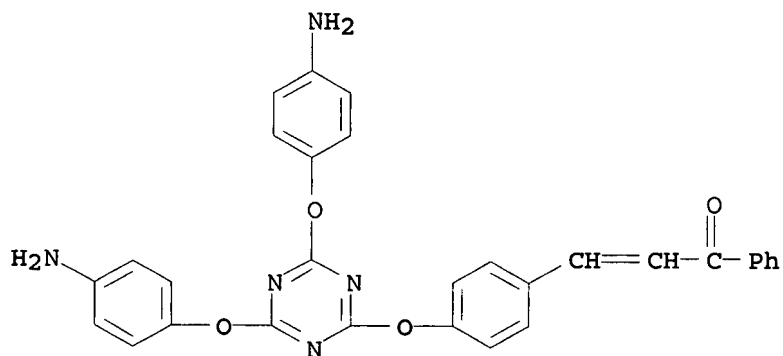
CRN 89-32-7  
CMF C10 H2 O6



RN 528881-52-9 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl-2-propen-1-one (9CI) (CA INDEX NAME)

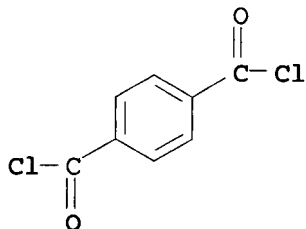
CM 1

CRN 528881-38-1  
CMF C30 H23 N5 O4



CM 2

CRN 100-20-9  
CMF C8 H4 Cl2 O2

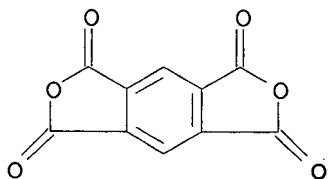


CM 3

CRN 89-32-7



CMF C10 H2 O6



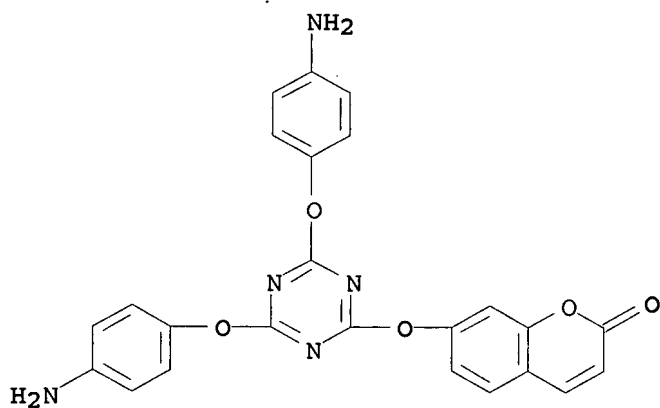
RN 528881-53-0 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6

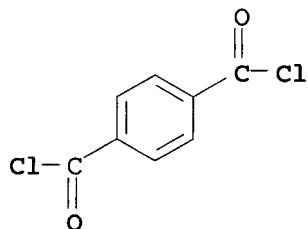
CMF C24 H17 N5 O5



CM 2

CRN 100-20-9

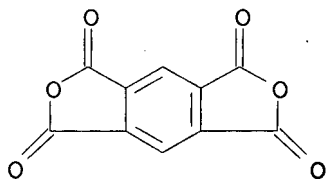
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7

CMF C10 H2 O6



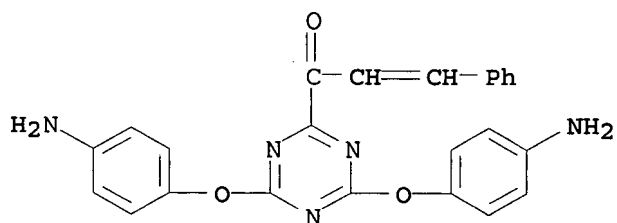
RN 870278-63-0 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
1-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-3-phenyl-2-propen-1-one  
(9CI) (CA INDEX NAME)

CM 1

CRN 870278-62-9

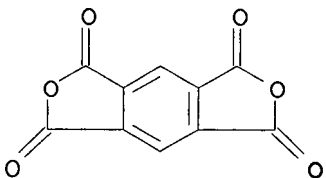
CMF C24 H19 N5 O3



CM 2

CRN 89-32-7

CMF C10 H2 O6

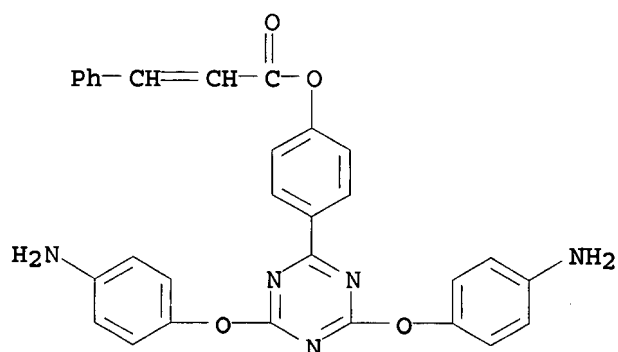


IT 528881-34-7P 528881-38-1P 528881-41-6P  
870278-62-9P

(photosensitive polymer-containing adhesive compns. with suppressed  
flowability for adhesive sheets)

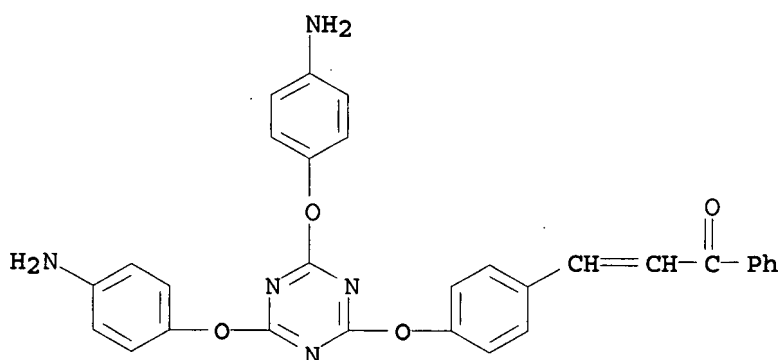
RN 528881-34-7 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-  
2-yl]phenyl ester (9CI) (CA INDEX NAME)



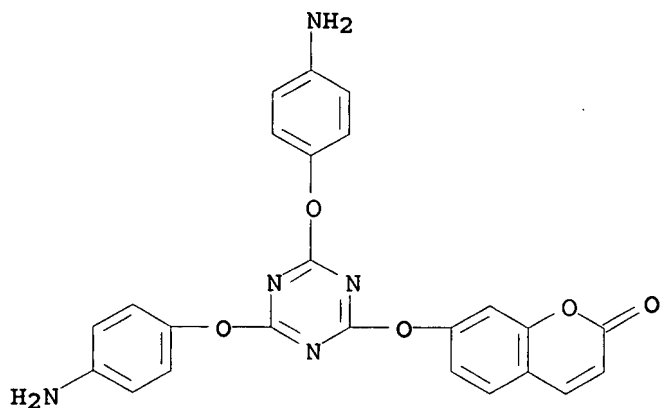
RN 528881-38-1 HCAPLUS

CN 2-Propen-1-one, 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl- (9CI) (CA INDEX NAME)



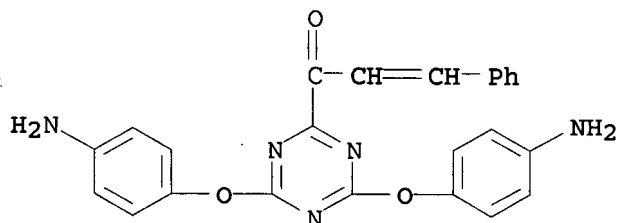
RN 528881-41-6 HCAPLUS

CN 2H-1-Benzopyran-2-one, 7-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]- (9CI) (CA INDEX NAME)



RN 870278-62-9 HCAPLUS

CN 2-Propen-1-one, 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-3-phenyl]- (CA INDEX NAME)



IC ICM C09J201-00  
ICS C09J007-00; C09J007-02; C09J179-00; C09J179-08; C09J181-02;  
C09J201-02

CC 38-3 (Plastics Fabrication and Uses)

IT 255867-44-8DP, hydroxy-containing, reaction product with  
photocrosslinkable compds. 255867-45-9DP, hydroxy-containing, reaction  
product with photocrosslinkable compds. 528881-46-1P  
528881-48-3P 528881-51-8P 528881-52-9P  
528881-53-0P 530135-91-2P 530135-93-4P 870278-45-8P  
870278-46-9P 870278-53-8P 870278-54-9P 870278-63-0P  
870779-05-8P 870779-07-0P 870779-08-1P 870779-09-2P  
870779-10-5P 870779-11-6P 870779-12-7P 870779-13-8P  
870779-14-9P 870779-15-0P 870779-16-1P 870837-05-1P  
(photosensitive polymer-containing adhesive compns. with suppressed  
flowability for adhesive sheets)

IT 20426-12-4P, 4-Hydroxychalcone 52752-97-3P 71187-20-7P  
255867-43-7P 528881-33-6P 528881-34-7P 528881-37-0P  
528881-38-1P 528881-41-6P 870278-44-7P  
870278-61-8P 870278-62-9P 870779-04-7P 870779-06-9P  
(photosensitive polymer-containing adhesive compns. with suppressed  
flowability for adhesive sheets)

L22 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1265046 HCAPLUS

DOCUMENT NUMBER: 144:23698

TITLE: Flexible metal-clad laminate films of  
photocrosslinked polymers and a manufacturing  
method for the same

INVENTOR(S): Shin, Dongcheon; Byun, Jeong-Il; Lee, Jun-Hee;  
Kang, Byoung-Un; Lee, Kyung Joon

PATENT ASSIGNEE(S): S. Korea

SOURCE: U.S. Pat. Appl. Publ., 67 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005266249	A1	20051201	US 2004-959016	20041005
KR 2005113383	A	20051202	KR 2004-38007	20040528
KR 2005113384	A	20051202	KR 2004-38008	20040528
KR 2005113385	A	20051202	KR 2004-38009	20040528
KR 2005113386	A	20051202	KR 2004-38010	20040528
KR 2005113387	A	20051202	KR 2004-38011	20040528
JP 2005335361	A	20051208	JP 2004-268937	20040915
CN 1701953	A	20051130	CN 2004-10086432	20041020

PRIORITY APPLN. INFO.:	KR 2004-38007	A 20040528
	KR 2004-38008	A 20040528
	KR 2004-38009	A 20040528
	KR 2004-38010	A 20040528
	KR 2004-38011	A 20040528

ED Entered STN: 02 Dec 2005

AB The flexible metal clad laminate film of the invention comprises a metal thin film; and a flexible insulating film formed by photocrosslinking reaction of polymers having side chains, which may be crosslinked by photoirradn. to form cyclobutane rings between chains. The flexible metal clad laminate film has good phys. properties such as size stability, and is almost not deflected or twisted. The photoactive polymers exhibit good heat resistance and are selected from polycyanurates, polyamide-polyimides, polyesters, and poly(thio)ethers. A typical photocrosslinkable polymer was manufactured by reaction of 10 g 4-(2-tetrahydropyranyloxy)bromobenzene with 7.17 g 2,4,6-trichloro-1,3,5-triazine in THF at -20° in the presence of Mg, polymerization of 5.13 g resulting monomer with 3.77 g bisphenol A in water in the presence of cetyl dimethylbenzylammonium chloride and NaOH, removal of the tetrahydropyranyl group by aging 24 h in THF-EtOH mixture in the presence of pyridinium p-toluenesulfonate, and reaction of the resulting OH group with cinnamoyl chloride 2 h at 0° in THF in the presence of Et3N.

IT 528881-44-9P 528881-48-3P 528881-52-9P  
 528881-53-0P 870278-60-7P 870278-63-0P  
 (flexible metal-clad laminate films of photocrosslinked polymers)

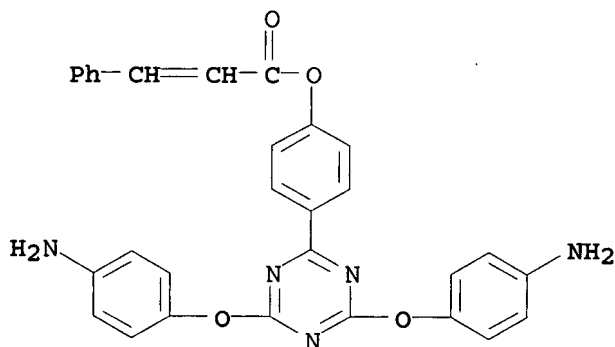
RN 528881-44-9 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phenyl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 528881-34-7

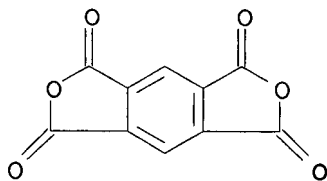
CMF C30 H23 N5 O4



CM 2

CRN 89-32-7

CMF C10 H2 O6



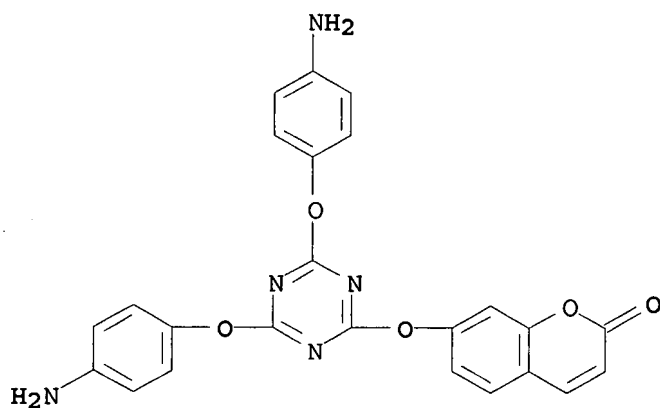
RN 528881-48-3 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-  
one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6

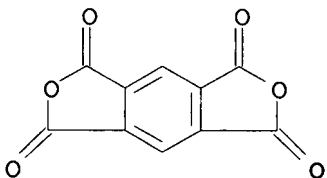
CMF C24 H17 N5 O5



CM 2

CRN 89-32-7

CMF C10 H2 O6



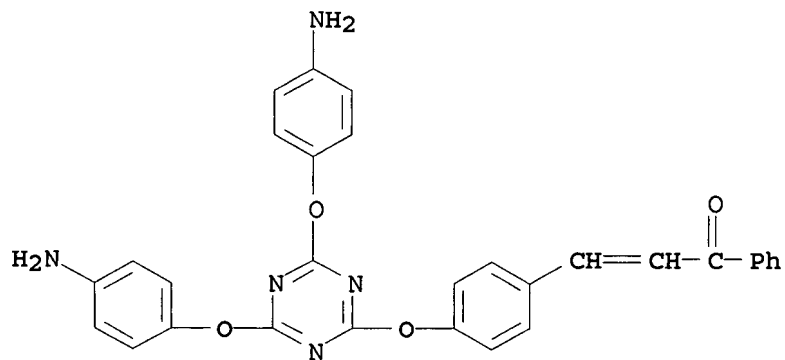
RN 528881-52-9 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-  
c']difuran-1,3,5,7-tetrone and 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-  
triazin-2-yl]oxy]phenyl]-1-phenyl-2-propen-1-one (9CI) (CA INDEX  
NAME)

CM 1

CRN 528881-38-1

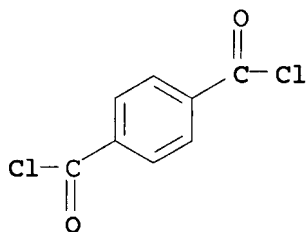
CMF C30 H23 N5 O4



CM 2

CRN 100-20-9

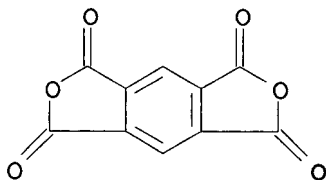
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7

CMF C10 H2 O6

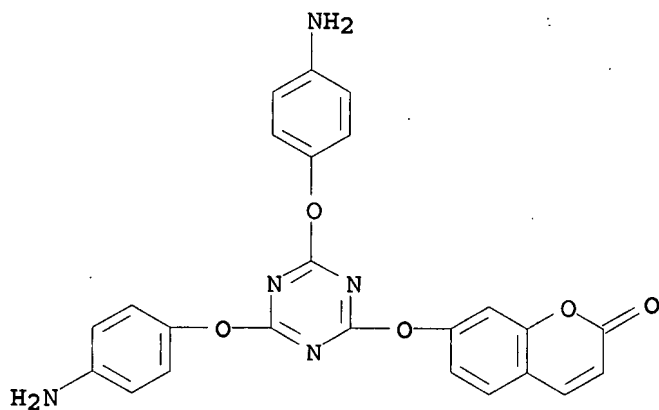


RN 528881-53-0 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-one (9CI) (CA INDEX NAME)

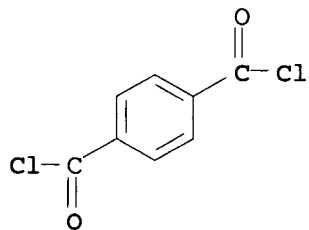
CM 1

CRN 528881-41-6  
CMF C24 H17 N5 O5



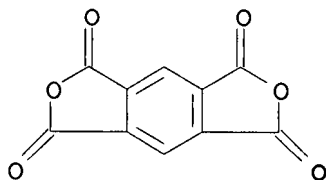
CM 2

CRN 100-20-9  
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7  
CMF C10 H2 O6

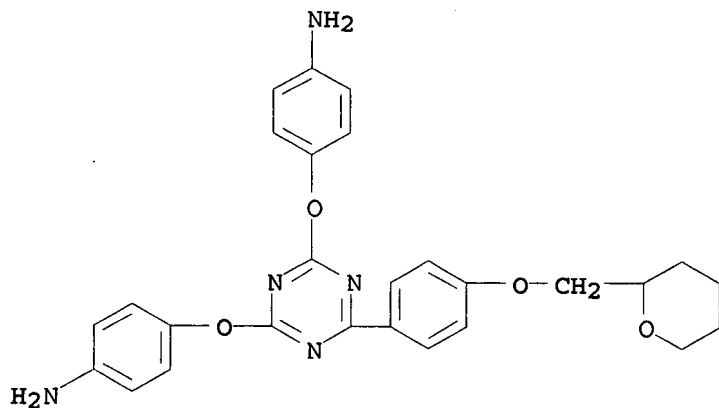


RN 870278-60-7 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 4,4'-[6-[4-[(tetrahydro-2H-pyran-2-yl)methoxy]phenyl]-1,3,5-triazine-2,4-diylbis(oxy)]bis[benzenamine]  
(9CI) (CA INDEX NAME)

CM 1

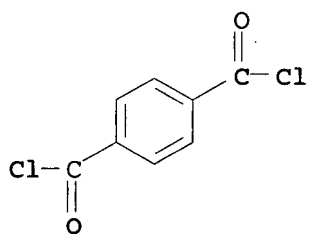


CRN 870278-59-4  
CMF C27 H27 N5 O4



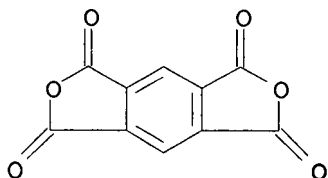
CM 2

CRN 100-20-9  
CMF C8 H4 Cl2 O2



CM 3

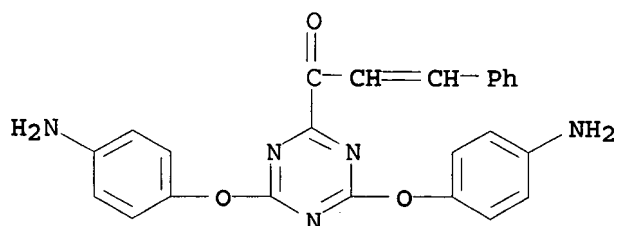
CRN 89-32-7  
CMF C10 H2 O6



RN 870278-63-0 HCAPLUS  
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
1-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-3-phenyl-2-propen-1-one  
(9CI) (CA INDEX NAME)

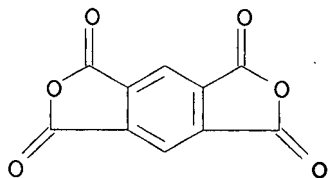
CM 1

CRN 870278-62-9  
CMF C24 H19 N5 O3

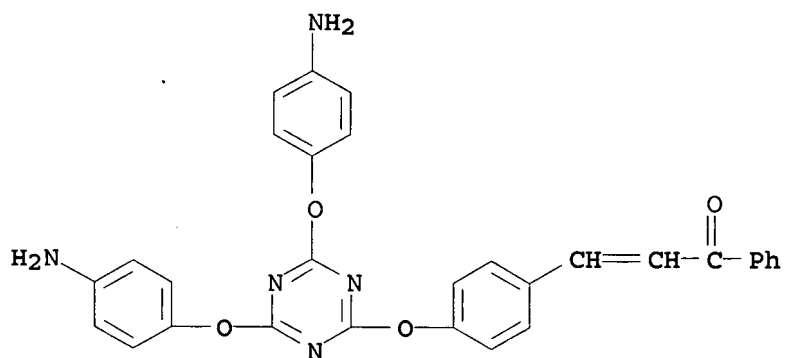


CM 2

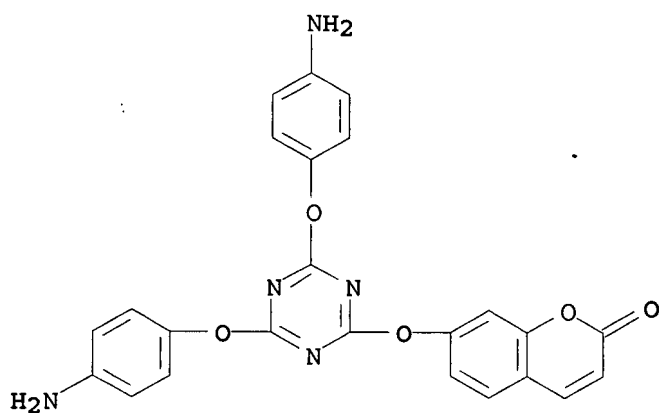
CRN 89-32-7  
CMF C10 H2 O6



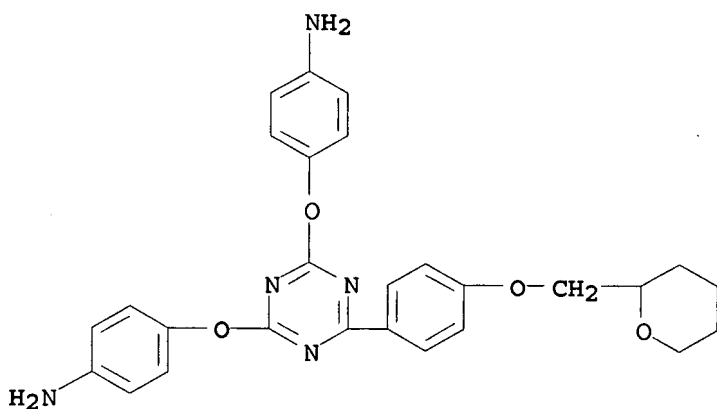
IT 528881-38-1P 528881-41-6P 870278-59-4P  
870278-62-9P  
(monomer; flexible metal-clad laminate films of photocrosslinked  
polymers)  
RN 528881-38-1 HCAPLUS  
CN 2-Propen-1-one, 3-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-  
yl]oxyphenyl-1-phenyl- (9CI) (CA INDEX NAME)



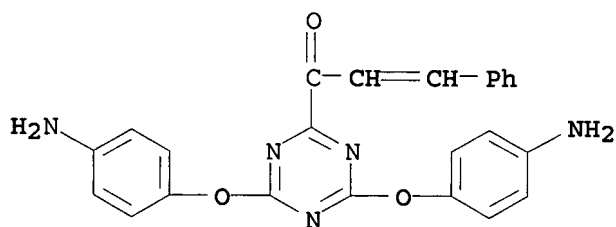
RN 528881-41-6 HCAPLUS  
CN 2H-1-Benzopyran-2-one, 7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-  
yl]oxy]- (9CI) (CA INDEX NAME)



RN 870278-59-4 HCAPLUS  
 CN Benzenamine, 4,4'-[[6-[4-[(tetrahydro-2H-pyran-2-yl)methoxy]phenyl]-1,3,5-triazine-2,4-diyl]bis(oxy)]bis- (CA INDEX NAME)



RN 870278-62-9 HCAPLUS  
 CN 2-Propen-1-one, 1-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-3-phenyl- (CA INDEX NAME)



IC ICM B32B015-08  
 INCL 428416000; 528106000  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 55, 56, 76  
 IT 93-35-6DP, 7-Hydroxycoumarin, reaction products with hydroxy-containing

polycyanurates 102-92-1DP, Cinnamoyl chloride, reaction products with hydroxy-containing polycyanurates 20426-12-4DP, 4-Hydroxychalcone, reaction products with hydroxy-containing polycyanurates 255867-44-8DP, deetherified, reaction products with cinnamoyl chloride 255867-44-8P 255867-45-9DP, deetherified, reaction products with cinnamoyl chloride

528881-44-9P 528881-45-0P 528881-48-3P

528881-49-4P 528881-52-9P 528881-53-0P

870278-36-7P 870278-37-8P 870278-39-0P 870278-40-3P

870278-42-5P 870278-43-6P 870278-45-8P 870278-46-9P

870278-48-1P 870278-49-2P 870278-51-6P 870278-52-7P

870278-53-8P 870278-54-9P 870278-55-0P 870278-56-1P

870278-57-2P 870278-58-3P 870278-60-7P

870278-63-0P 870278-64-1P

(flexible metal-clad laminate films of photocrosslinked polymers)

IT 255867-43-7P 528881-38-1P 528881-41-6P

870278-35-6P, 2-[4-(Cinnamoyloxy)phenyl]-4,6-(4-hydroxyphenyl)-1,3,5-triazine 870278-38-9P 870278-41-4P 870278-44-7P 870278-47-0P

870278-50-5P 870278-59-4P 870278-62-9P

(monomer; flexible metal-clad laminate films of photocrosslinked polymers)

L22 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:878432 HCAPLUS

DOCUMENT NUMBER: 141:351190

TITLE: Diamine compounds containing triazine groups, their polyamic acids and their liquid crystal alignment films

INVENTOR(S): Oh, Jae Min; Lee, Bum Jin; Lee, Moo Young; Kwon, O. Bum; Oh, Joon Suk; Park, Dong Won; Kim, Chul Hee

PATENT ASSIGNEE(S): Cheil Industries Inc., S. Korea

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004090017	A1	20041021	WO 2004-KR102	20040120
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
KR 2004088158	A	20041016	KR 2003-22261	20030409
CN 1701086	A	20051123	CN 2004-80000704	20040120
JP 2006511696	T	20060406	JP 2005-518195	20040120
CN 101007787	A	20070801	CN 2006-10160945	20040120
KR 2005091680	A	20050915	KR 2005-79285	20050829
US 2006149028	A1	20060706	US 2005-525671	20050912
PRIORITY APPLN. INFO.:			KR 2003-22261	A 20030409

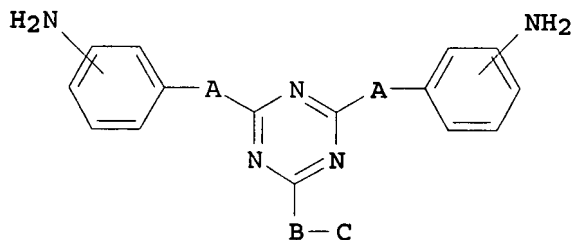
CN 2004-80000704 A3 20040120

WO 2004-KR102 W 20040120

OTHER SOURCE(S): MARPAT 141:351190

ED Entered STN: 22 Oct 2004

GI



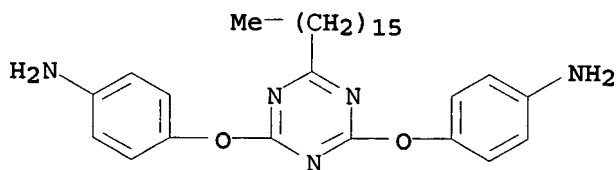
AB The diamine compound containing a triazine group I (A = direct bond, -O-, -COO-, -CONH-, -OCO-; B = direct bond, -O-, -COO-, -CONH-, -OCO-; C = C1-30 linear, branched or cyclic monovalent organic group). is polymerized with a tetracarboxylic dianhydride to form a polyamic acid, which is used to form a liquid crystal alignment film by coating and imidizing the polyamic acid. The liquid crystal alignment film has good heat resistance, high transparency in visible light region and improved voltage holding ratio. Thus, 0.05 mol 2,4-diaminophenoxy-6-hexadecyl-1,3,5-triazine prepared from bromohexadecane, cyanuric chloride, 4-nitrophenol was polymerized with 5-(2,5-dioxotetrahydrofuryl)-3-methylcyclohexane-1,2-dicarboxylic acid dianhydride (DOCDA) 0.5, 4,4-methylenedianiline 0.95 and pyromellitic acid dianhydride 0.5 mol to form a polyamic acid with mol. weight 50,000-150,000 g/mol, which was applied onto an ITO glass substrate and cured to give a film showing pretilt angle 5.3, voltage holding ration 99.5 at room temperature and good printability alignment properties and spreadability.

IT 775342-21-7P

(diamine compds. containing triazine groups for preparing polyamic acids used in liquid crystal alignment films)

RN 775342-21-7 HCAPLUS

CN Benzenamine, 4,4'-[(6-hexadecyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis-(9CI) (CA INDEX NAME)



IT 775342-22-8P 775342-23-9P 775342-24-0P

(diamine compds. containing triazine groups for preparing polyamic acids used in liquid crystal alignment films)

RN 775342-22-8 HCAPLUS

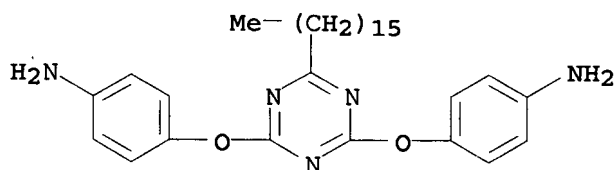
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with

4,4'-[(6-hexadecyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine],  
4,4'-methylenebis[benzenamine] and 3a,4,5,7a-tetrahydro-7-methyl-5-  
(tetrahydro-2,5-dioxo-3-furanyl)-1,3-isobenzofurandione (9CI) (CA  
INDEX NAME)

CM 1

CRN 775342-21-7

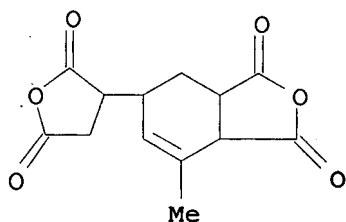
CMF C31 H45 N5 O2



CM 2

CRN 73003-90-4

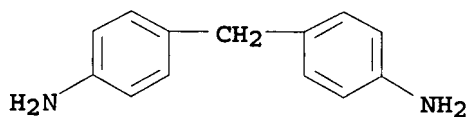
CMF C13 H12 O6



CM 3

CRN 101-77-9

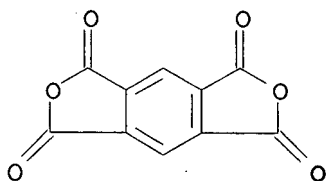
CMF C13 H14 N2



CM 4

CRN 89-32-7

CMF C10 H2 O6



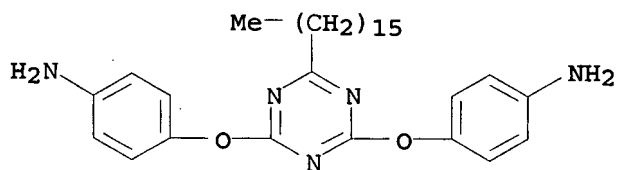
RN 775342-23-9 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 4,4'-[(6-hexadecyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine], 4,4'-methylenebis[benzenamine] and tetrahydrocyclobuta[1,2-c:3,4-c']difurantetrone (9CI) (CA INDEX NAME)

CM 1

CRN 775342-21-7

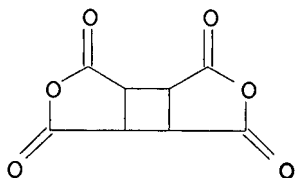
CMF C31 H45 N5 O2



CM 2

CRN 4415-87-6

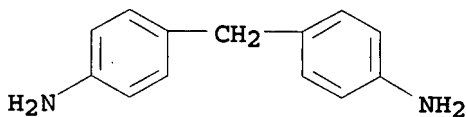
CMF C8 H4 O6



CM 3

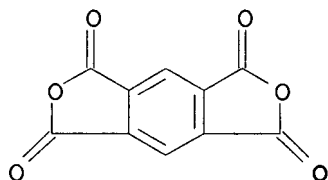
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CMF C13 H14 N2



CM 4

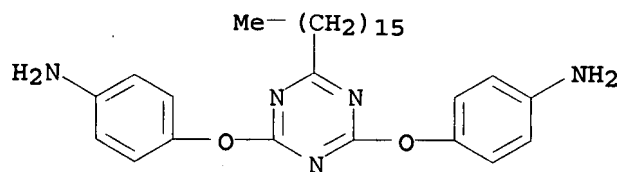
CRN 89-32-7  
CMF C10 H2 O6



RN 775342-24-0 HCAPLUS  
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
4,4'-[(6-hexadecyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine]  
and 3a,4,5,7a-tetrahydro-7-methyl-5-(tetrahydro-2,5-dioxo-3-furanyl)-  
1,3-isobenzofurandione (9CI) (CA INDEX NAME)

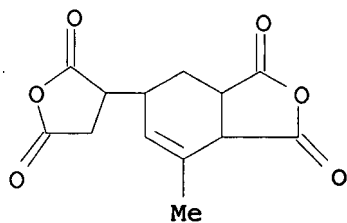
CM 1

CRN 775342-21-7  
CMF C31 H45 N5 O2



CM 2

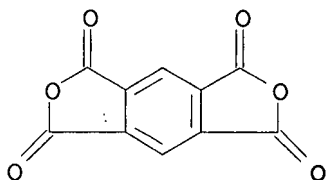
CRN 73003-90-4  
CMF C13 H12 O6



CM 3

CRN 89-32-7  
CMF C10 H2 O6





IC ICM C08G073-10  
ICS C07D251-00; G02F001-1337  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 37  
IT 775342-21-7P  
(diamine compds. containing triazine groups for preparing polyamic acids  
used in liquid crystal alignment films)  
IT 775342-22-8P 775342-23-9P 775342-24-0P  
(diamine compds. containing triazine groups for preparing polyamic acids  
used in liquid crystal alignment films)  
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L22 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:396978 HCAPLUS  
DOCUMENT NUMBER: 138:402646  
TITLE: Triazine ring based polymers for photoinduced  
liquid crystal alignment, liquid crystal alignment  
layer containing the same, liquid crystal element  
using the alignment layer and method of  
manufacturing the same  
INVENTOR(S): Shin, Dong-Cheon; Kim, Jin-Yool; Park, Kyu-Soon;  
Kim, Tae-Min  
PATENT ASSIGNEE(S): LG Cable Ltd., S. Korea  
SOURCE: PCT Int. Appl., 113 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003042328	A1	20030522	WO 2002-KR2101	20021111
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2003040089	A	20030522	KR 2002-69828	20021111
AU 2002353595	A1	20030526	AU 2002-353595	20021111
JP 2004521997	T	20040722	JP 2003-544148	20021111
JP 3929444	B2	20070613		
CN 1535306	A	20041006	CN 2002-803167	20021111
CN 1818020	A	20060816	CN 2006-10056961	20021111

CN 1831086	A	20060913	CN 2006-10056962	20021111
TW 230193	B	20050401	TW 2003-92109299	20030422
US 2004039150	A1	20040226	US 2003-415692	20030501
US 7067566	B2	20060627		

PRIORITY APPLN. INFO.:

	KR 2001-70018	A	20011112
	KR 2001-70019	A	20011112
	CN 2002-803167	A3	20021111
	WO 2002-KR2101	W	20021111

ED Entered STN: 23 May 2003

AB Triazine ring-based polyamides, polyimides, and polyamide-polyimides for photoinduced liquid crystal alignment introduces photoactive groups for inducing, reinforcing, improving and preserving liquid crystal alignment, for example photoreactor such as cinnamate, coumarin, chalcone and maleimide, as a chain to have at least one photoactive group. The photoactive groups may experience Fries rearrangement which induces liquid crystal alignment or experience photodimerization, photoisomerization, photocrosslinking or photodegrdn. to reinforce, change or preserve the generated alignment. These polymers exhibit improved heat resistance as liquid crystal alignment agents. A typical polyamide was manufactured by polymerization of 20.3 g terephthaloyl chloride

with the diamine 53.156 g diamine prepared by reaction of 4-aminophenol with 2-(4-cinnamoyloxyphenyl)-4,6-dichloro-1,3,5-triazine in THF in the presence of Et3N.

IT 528881-35-8P 528881-39-2P 528881-42-7P  
528881-44-9P 528881-46-1P 528881-48-3P  
528881-51-8P 528881-52-9P 528881-53-0P

(heat-resistant triazine ring based polyamides, polyimides, and polyamide-polyimides for photoinduced liquid crystal alignment)

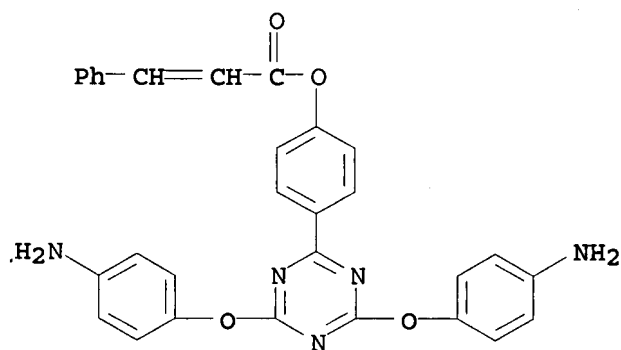
RN 528881-35-8 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phenyl ester, polymer with 1,4-benzenedicarbonyl dichloride (9CI)  
(CA INDEX NAME)

CM 1

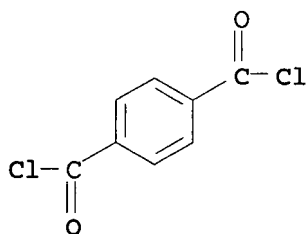
CRN 528881-34-7

CMF C30 H23 N5 O4



CM 2

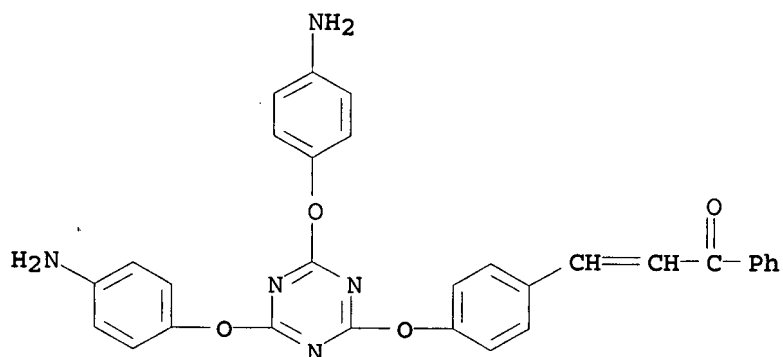
CRN 100-20-9  
CMF C8 H4 Cl2 O2



RN 528881-39-2 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl-2-propen-1-one (9CI) (CA INDEX NAME)

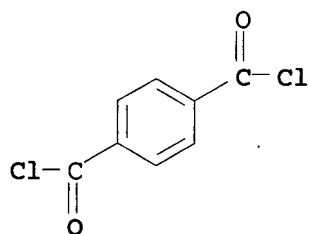
CM 1

CRN 528881-38-1  
CMF C30 H23 N5 O4



CM 2

CRN 100-20-9  
CMF C8 H4 Cl2 O2



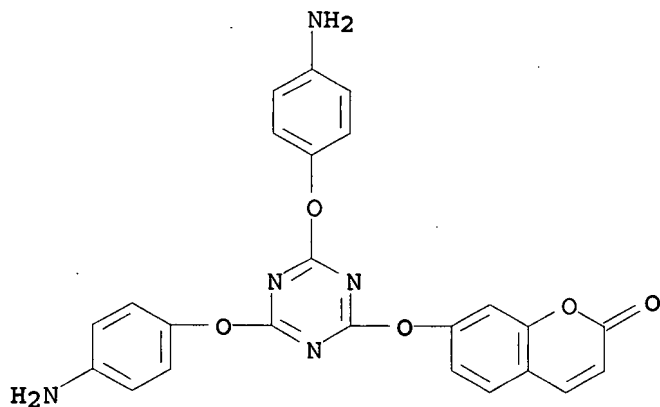
RN 528881-42-7 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 7-[[4,6-bis(4-

aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6

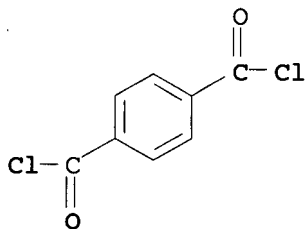
CMF C24 H17 N5 O5



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



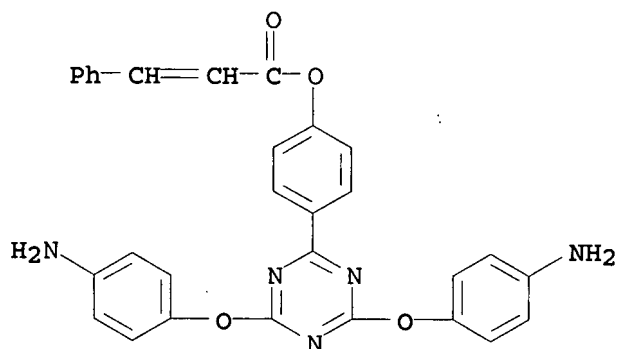
RN 528881-44-9 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phenyl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 528881-34-7

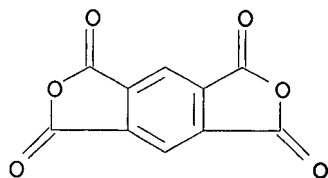
CMF C30 H23 N5 O4



CM 2

CRN 89-32-7

CMF C10 H2 O6



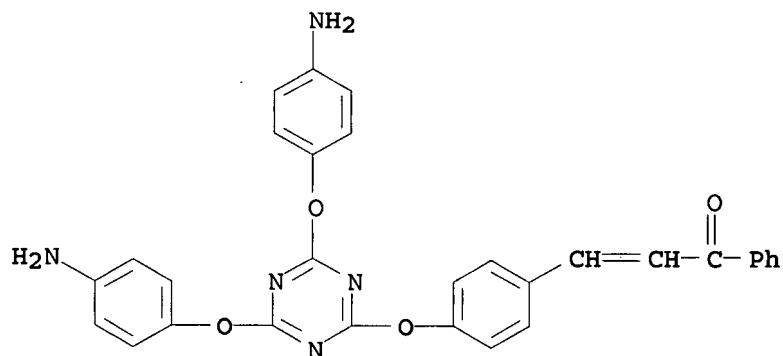
RN 528881-46-1 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl-  
 2-propen-1-one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-38-1

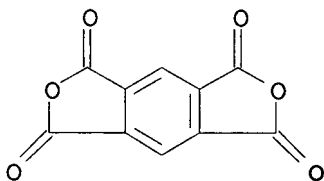
CMF C30 H23 N5 O4



CM 2

CRN 89-32-7

CMF C10 H2 O6



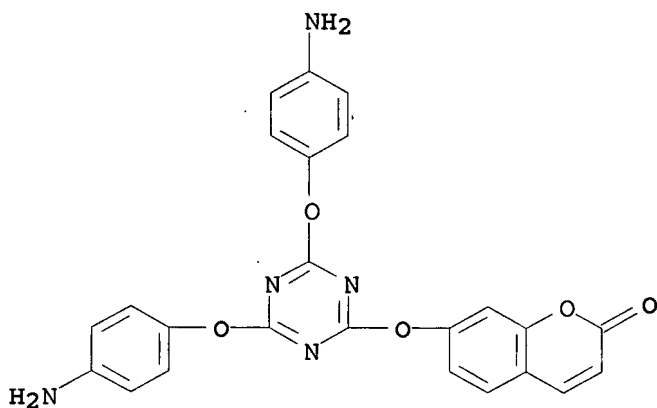
RN 528881-48-3 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-  
one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6

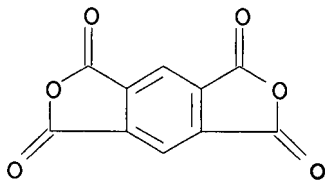
CMF C24 H17 N5 O5



CM 2

CRN 89-32-7

CMF C10 H2 O6



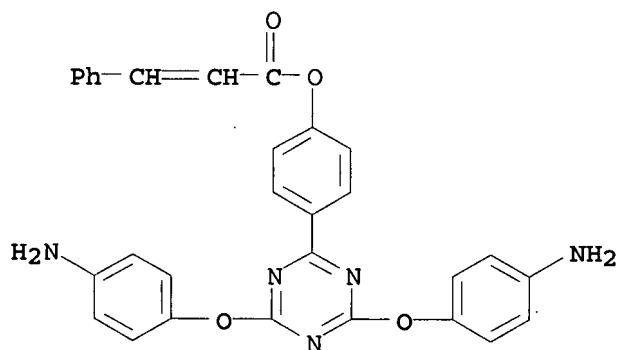
RN 528881-51-8 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-  
2-yl]phenyl ester, polymer with 1,4-benzenedicarbonyl dichloride and  
1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX  
NAME)

CM 1

CRN 528881-34-7

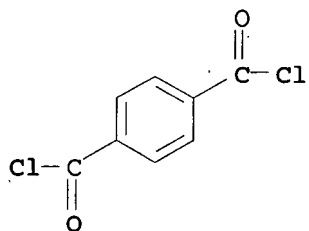
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CM 2

CRN 100-20-9

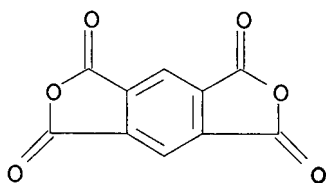
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7

CMF C10 H2 O6

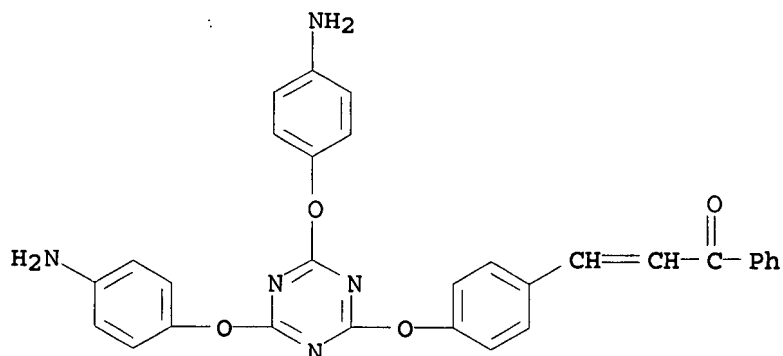


RN 528881-52-9 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 3-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1-phenyl-2-propen-1-one (9CI) (CA INDEX NAME)

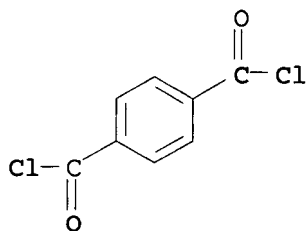
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CRN 528881-38-1  
CMF C30 H23 N5 O4



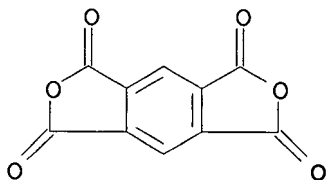
CM 2

CRN 100-20-9  
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7  
CMF C10 H2 O6

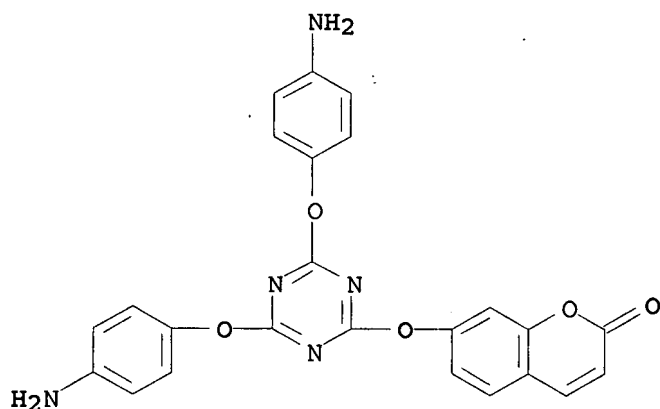


RN 528881-53-0 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 7-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]-2H-1-benzopyran-2-one (9CI) (CA INDEX NAME)

CM 1

CRN 528881-41-6  
CMF C24 H17 N5 O5

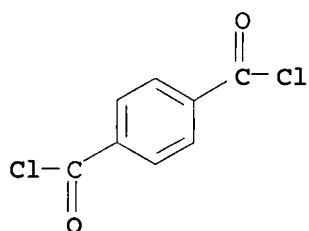




CM 2

CRN 100-20-9

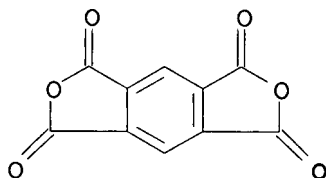
CMF C8 H4 Cl2 O2



CM 3

CRN 89-32-7

CMF C10 H2 O6



IT 528881-34-7P, 4,6-Bis(4-aminophenyl)-2-(4-cinnamoyloxyphenyl)-  
 1,3,5-triazine 528881-38-1P 528881-41-6P  
 (monomer; heat-resistant triazine ring based polyamides,  
 polyimides, and polyamide-polyimides for photoinduced liquid crystal  
 alignment)

RN 528881-34-7 HCAPLUS

CN 2-Propenoic acid, 3-phenyl-, 4-[4,6-bis(4-aminophenoxy)-1,3,5-triazin-  
 2-yl]phenyl ester (9CI) (CA INDEX NAME)



IT 528881-35-8P 528881-36-9P 528881-39-2P  
 528881-40-5P 528881-42-7P 528881-43-8P  
 528881-44-9P 528881-45-0P 528881-46-1P  
 528881-47-2P 528881-48-3P 528881-49-4P  
 528881-51-8P 528881-52-9P 528881-53-0P  
 (heat-resistant triazine ring based polyamides, polyimides, and  
 polyamide-polyimides for photoinduced liquid crystal alignment)  
 IT 528881-34-7P, 4,6-Bis(4-aminophenyl)-2-(4-cinnamoyloxyphenyl)-  
 1,3,5-triazine 528881-38-1P 528881-41-6P  
 (monomer; heat-resistant triazine ring based polyamides,  
 polyimides, and polyamide-polyimides for photoinduced liquid crystal  
 alignment)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L22 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:72723 HCAPLUS

DOCUMENT NUMBER: 130:182434

TITLE: Synthesis of 1,3,5-triazine amino derivatives with  
 higher alkyl radicals

AUTHOR(S): Kelarev, V. I.; Koshelev, V. N.; Silin, M. A.;  
 Gracheva, O. G.; Golubeva, I. A.

CORPORATE SOURCE: Gos. Akad. Nefti Gaza im. I.M. Gubkina, Russia  
 SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i  
 Khimicheskaya Tekhnologiya (1998), 41(2), 14-20  
 CODEN: IVUKAR; ISSN: 0579-2991

PUBLISHER: Ivanovskaya Gosudarstvennaya Khimiko-  
 Tekhnologicheskaya Akademiya

DOCUMENT TYPE: Journal

LANGUAGE: Russian

OTHER SOURCE(S): CASREACT 130:182434

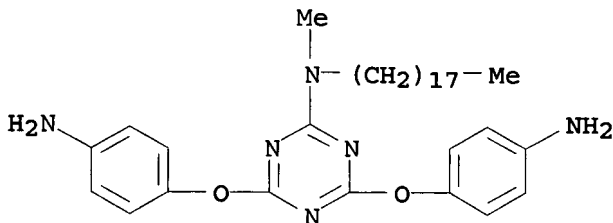
ED Entered STN: 04 Feb 1999

AB Reaction of cyanuric chloride with N-methyloctadecylamine results in  
 replacement of 1, 2, or 3 Cl atoms to form N-substituted amino derivs.  
 of 1,3,5-triazine with octadecyl radicals. The reaction of mono- and  
 dichloro-1,3,5-triazines with primary and secondary amines, phenols,  
 and 2-mercaptobenzazoles has been studied. N-substituted  
 2,4,6-triamino-, 2-amino-4,6-bis(aryloxy)-, 2-amino-4,6-bis(2-  
 benzazolylthio)-, 2,4-diamino-6-(aryloxy)-, and 2,4-diamino-6(2-  
 benzazolylthio)-1,3,5-triazines containing N-methyloctadecylamine  
 fragments have been prepared

IT 220581-11-3P  
 (preparation of)

RN 220581-11-3 HCAPLUS

CN 1,3,5-Triazin-2-amine, 4,6-bis(4-aminophenoxy)-N-methyl-N-octadecyl-  
 (9CI) (CA INDEX NAME)



CC 28-19 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 16646-16-5P 16646-21-2P 198994-36-4P 198994-49-9P 217658-35-0P  
217658-39-4P 217658-42-9P 217658-44-1P 220580-71-2P  
220580-77-8P 220580-82-5P 220580-91-6P 220581-02-2P  
220581-07-7P 220581-11-3P 220581-20-4P 220581-25-9P  
220581-29-3P 220581-34-0P 220581-35-1P 220581-36-2P  
220581-38-4P  
(preparation of)

L22 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:195442 HCAPLUS

DOCUMENT NUMBER: 116:195442

TITLE: Soluble maleimide prepolymers containing  
1,3,5-triazine group as composite resin matrices.  
Part 2. Evaluation of laminates with carbon fiber

AUTHOR(S): Maiti, Sukumar; Dolui, Swapan K.

CORPORATE SOURCE: Mater. Sci. Cent., Indian Inst. Technol.,  
Kharagpur, 721 302, India

SOURCE: Journal of Polymer Materials (1991), 8(4), 299-302  
CODEN: JOPME8; ISSN: 0970-0838

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 16 May 1992

AB Maleimide-terminated benzophenonetetracarboxylic polyimide-polyether  
prepolymers containing 1,3,5-triazine groups were used as the resin matrix  
for fabrication of laminates with carbon fiber. Curing  
characteristics of the matrix resin, phys. and mech. properties, and  
thermal stability of the carbon fiber composites with this resin were  
studied.

IT 136260-75-8D, maleimide group-terminated 136283-19-7D  
, maleimide group-terminated  
(properties of neat and carbon fiber-reinforced, structure in  
relation to)

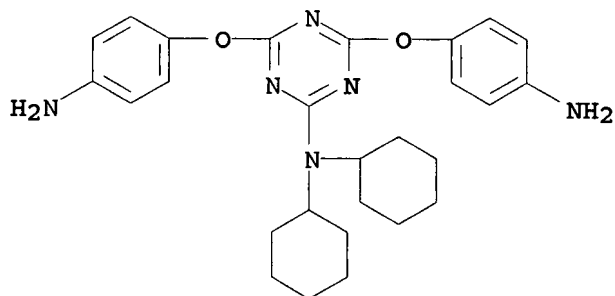
RN 136260-75-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with  
4,4'-[[6-(dicyclohexylamino)-1,3,5-triazine-2,4-  
diyl]bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 136260-74-7

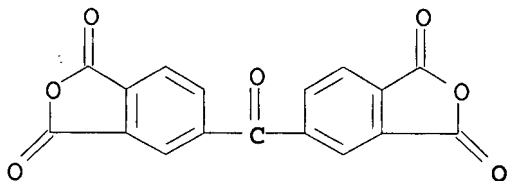
CMF C27 H34 N6 O2



CM 2

CRN 2421-28-5

CMF C17 H6 O7



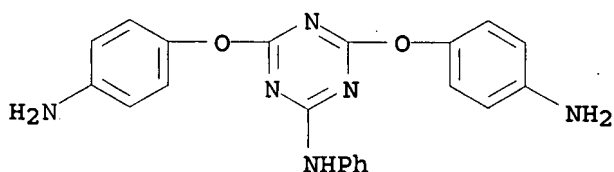
RN 136283-19-7 HCAPLUS

CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with  
4,6-bis(4-aminophenoxy)-N-phenyl-1,3,5-triazin-2-amine (9CI) (CA  
INDEX NAME)

CM 1

CRN 136259-47-7

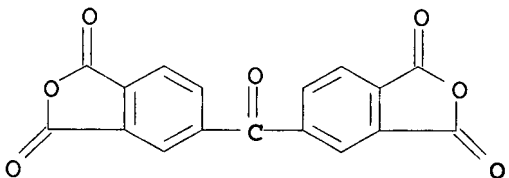
CMF C21 H18 N6 O2



CM 2

CRN 2421-28-5

CMF C17 H6 O7



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT 136260-75-8D, maleimide group-terminated 136283-19-7D  
, maleimide group-terminated 139724-75-7D, maleimide  
group-terminated 139724-76-8D, maleimide group-terminated  
(properties of neat and carbon fiber-reinforced, structure in  
relation to)

L22 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:130205 HCAPLUS

DOCUMENT NUMBER: 116:130205

TITLE: Soluble maleimide prepolymers containing  
1,3,5-triazine group as composite resin matrixes.  
Part 1. Synthesis and characterization

AUTHOR(S): Dolui, Swapan K.; Maiti, Sukumar

CORPORATE SOURCE: Mater. Sci. Cent., Indian Inst. Technol.,  
Kharagpur, 721 302, India

SOURCE: Journal of Polymer Materials (1991), 8(1), 59-66  
CODEN: JOPME8; ISSN: 0970-0838

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 03 Apr 1992

AB Low-mol.-weight amine-terminated monomaleimide prepolymers containing 1,3,5-triazine groups were synthesized by cocondensing benzophenonetetracarboxylic dianhydride, diamines having 1,3,5-triazine groups, and maleic anhydride. These low-mol.-weight reactive prepolymers were soluble in low-boiling solvents such as CHCl<sub>3</sub>, THF, etc. These were characterized by elemental (N) analyses, IR, and NMR spectroscopy, vapor-pressure osmometry, and viscosity. On heating at 180-190° these prepolymers underwent simultaneous chain extension by Michael addition reaction and crosslinking by mutual reaction between their amine-terminated and maleimide-terminated ends. The cured polyimides were thermally stable and their thermal behavior was studied by TGA, DTA, and isothermal aging at 200-250°.

IT 136260-75-8P 136283-19-7P  
(preparation and characterization of soluble)

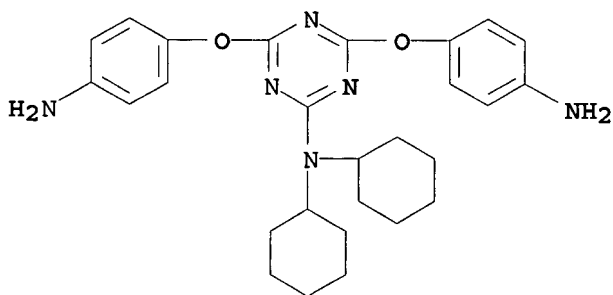
RN 136260-75-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with 4,4'-[[6-(dicyclohexylamino)-1,3,5-triazine-2,4-diyl]bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 136260-74-7

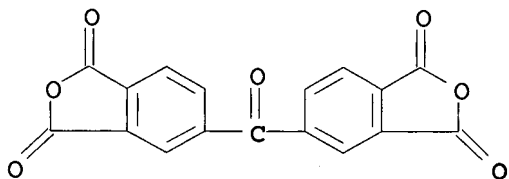
CMF C27 H34 N6 O2



CM 2

CRN 2421-28-5

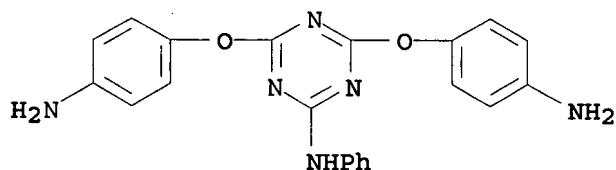
CMF C17 H6 O7



RN 136283-19-7 HCAPLUS  
 CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with  
 4,6-bis(4-aminophenoxy)-N-phenyl-1,3,5-triazin-2-amine (9CI) (CA  
 INDEX NAME)

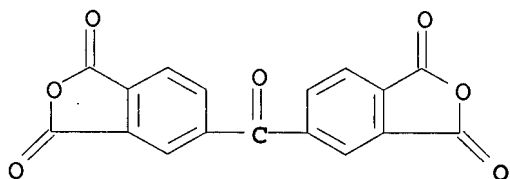
CM 1

CRN 136259-47-7  
 CMF C21 H18 N6 O2

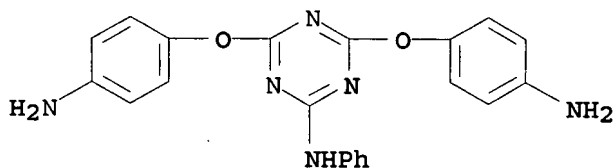


CM 2

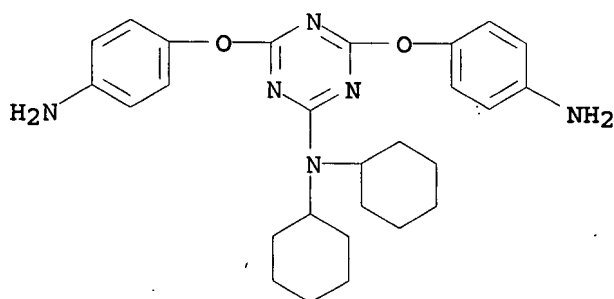
CRN 2421-28-5  
 CMF C17 H6 O7



IT 136259-47-7P 136260-74-7P  
 (preparation and polycondensation of, with benzophenonetetracarboxylic  
 dianhydride)  
 RN 136259-47-7 HCAPLUS  
 CN 1,3,5-Triazin-2-amine, 4,6-bis(4-aminophenoxy)-N-phenyl- (9CI) (CA  
 INDEX NAME)



RN 136260-74-7 HCAPLUS  
 CN Benzenamine, 4,4'-[[6-(dicyclohexylamino)-1,3,5-triazine-2,4-  
 diyl]bis(oxy)]bis- (9CI) (CA INDEX NAME)



CC 37-3 (Plastics Manufacture and Processing)  
 IT 136260-75-8P 136283-19-7P 139724-75-7P  
 139724-76-8P  
 (preparation and characterization of soluble)  
 IT 136259-47-7P 136260-74-7P  
 (preparation and polycondensation of, with benzophenonetetracarboxylic dianhydride)

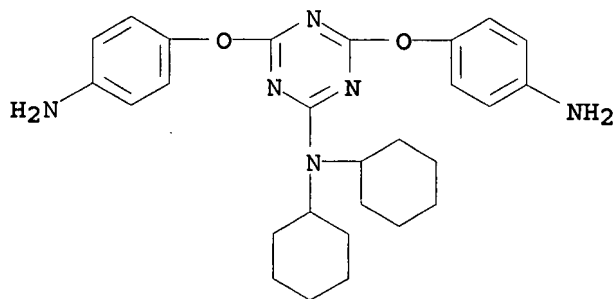
L22 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:537304 HCAPLUS  
 DOCUMENT NUMBER: 115:137304  
 TITLE: Soluble maleimide prepolymers containing  
 1,3,5-triazine groups as composite resin matrices:  
 synthesis, characterization, and evaluation  
 AUTHOR(S): Dolui, Swapan K.  
 CORPORATE SOURCE: Org. Build. Mater. Div., Cent. Build. Res. Inst.,  
 Roorkee, 247 667, India  
 SOURCE: Angewandte Makromolekulare Chemie (1991), 190,  
 1-14  
 CODEN: ANMCBO; ISSN: 0003-3146  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 05 Oct 1991  
 AB Low-mol.-weight amine-terminated monomaleimide prepolymers containing  
 1,3,5-triazine groups as well as ether linkages were prepared by  
 reacting benzophenonetetracarboxylic dianhydride, diamines containing  
 1,3,5-triazine groups, and maleic anhydride. These reactive  
 prepolymers were soluble in low-boiling solvents such as CHCl<sub>3</sub>, THF, etc.  
 They were characterized by elemental anal., IR and NMR spectroscopy,  
 vapor pressure osmometry, and viscosity. On heating at  
 180-190°, these prepolymers underwent simultaneous chain  
 extension by Michael addition reaction and crosslinking by mutual  
 reaction between their amine-terminated and maleimide-terminated ends.  
 The cured polymers were thermostable, and the thermal behavior was  
 studied by TG, DTA, and isothermal aging. Laminates fabricated using  
 these prepolymers and carbon fiber reinforcement were evaluated by  
 flexural strength and interlaminar shear strength.  
 IT 136260-75-8DP, maleic anhydride-terminated  
 136283-19-7DP, maleic anhydride-terminated  
 (preparation and crosslinking of)  
 RN 136260-75-8 HCAPLUS  
 CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with  
 4,4'-[[6-(dicyclohexylamino)-1,3,5-triazine-2,4-  
 diyl]bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

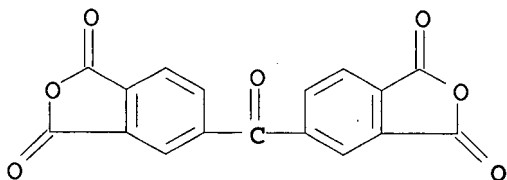


CRN 136260-74-7  
CMF C27 H34 N6 O2



CM 2

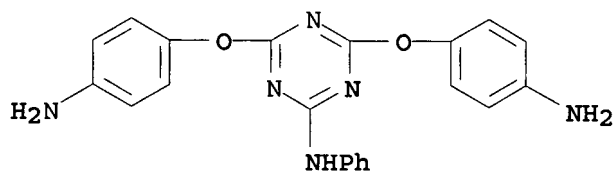
CRN 2421-28-5  
CMF C17 H6 O7



RN 136283-19-7 HCAPLUS  
CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with  
4,6-bis(4-aminophenoxy)-N-phenyl-1,3,5-triazin-2-amine (9CI) (CA  
INDEX NAME)

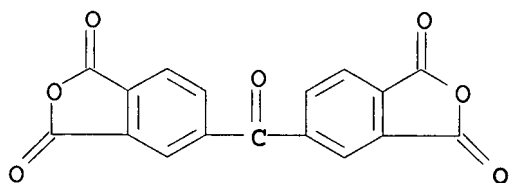
CM 1

CRN 136259-47-7  
CMF C21 H18 N6 O2

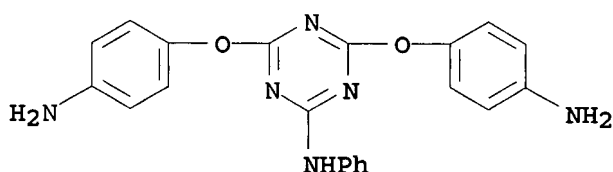


CM 2

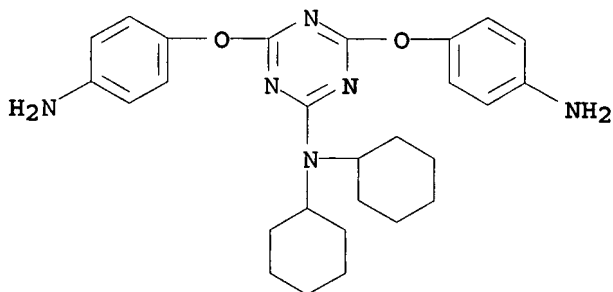
CRN 2421-28-5  
CMF C17 H6 O7



IT 136259-47-7P 136260-74-7P  
 (preparation and polymerization of, with benzophenonetetracarboxylic dianhydride and maleic anhydride)  
 RN 136259-47-7 HCAPLUS  
 CN 1,3,5-Triazin-2-amine, 4,6-bis(4-aminophenoxy)-N-phenyl- (9CI) (CA INDEX NAME)



RN 136260-74-7 HCAPLUS  
 CN Benzenamine, 4,4'-[[6-(dicyclohexylamino)-1,3,5-triazine-2,4-diyl]bis(oxy)]bis- (9CI) (CA INDEX NAME)



CC 37-3 (Plastics Manufacture and Processing)  
 IT 108-31-6DP, 2,5-Furandione, reaction products with benzophenonetetracarboxylic dianhydride-oxybis(aminophenyl)triazine derivative copolymers 136184-56-0P 136210-17-8P 136260-75-8DP, maleic anhydride-terminated 136283-19-7DP, maleic anhydride-terminated (preparation and crosslinking of)  
 IT 136259-47-7P 136260-74-7P  
 (preparation and polymerization of, with benzophenonetetracarboxylic dianhydride and maleic anhydride)

L22 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1989:498224 HCAPLUS  
 DOCUMENT NUMBER: 111:98224  
 TITLE: New crosslinkable polyimides, polyamides and polyureas derived from 2,4,6-tris(4-aminophenoxy)-s-triazine

AUTHOR(S): Melissaris, Anastasios P.; Mikroyannidis, John A.  
 CORPORATE SOURCE: Dep. Chem., Univ. Patras, Patras, 260 01, Greece  
 SOURCE: European Polymer Journal (1989), 25(5), 455-60  
 CODEN: EUPJAG; ISSN: 0014-3057

DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 16 Sep 1989

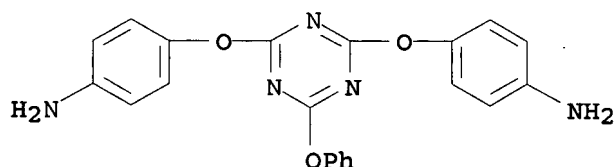
AB The title polymers, bearing maleimide, nadimide, or itaconimide pendant groups, were prepared and characterized. The polymers were prepared by reacting 2,4,6-tris(4-aminophenoxy)-s-triazine with an equimolar amount of maleic, nadic, or itaconic anhydride followed by reaction of the resulting monoamic acid with pyromellitic dianhydride (I), terephthaloyl chloride (II), or TDI. Reference polymers were prepared for comparative purposes by reacting 2,4-bis(4-aminophenoxy)-6-phenoxy-s-triazine with I, II, or TDI. Crosslinking of polymers was investigated by DTA. Dynamic TGA showed that all crosslinked resins were significantly more heat-resistant than the corresponding reference polymers. Thermal stabilities of crosslinked polymers with respect to the structure of the backbone were in the order polyimide > polyamide > polyurea; with respect to the structure of the pendant groups, they were in the order maleimide > nadimide > itaconimide.

IT 122343-78-6P

(preparation and polymerization of, with anhydrides, for polyamides and polyimides and polyureas preparation)

RN 122343-78-6 HCAPLUS

CN Benzenamine, 4,4'-[6-phenoxy-1,3,5-triazine-2,5-diylbis(oxy)]bis-(9CI) (CA INDEX NAME)



IT 122343-79-7P 122343-86-6P 122343-89-9P  
 (preparation and thermal stability of)

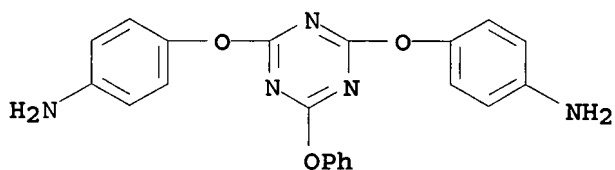
RN 122343-79-7 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 4,4'-[6-phenoxy-1,3,5-triazine-2,4-diylbis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

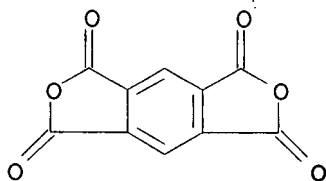
CRN 122343-78-6

CMF C21 H17 N5 O3



CM 2

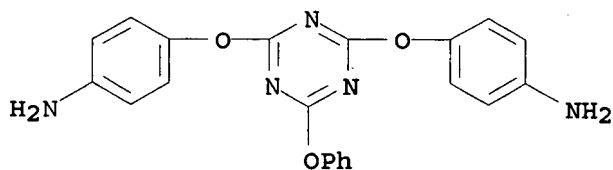
CRN 89-32-7  
CMF C10 H2 O6



RN 122343-86-6 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 4,4'-[6-phenoxy-1,3,5-triazine-2,4-diylbis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

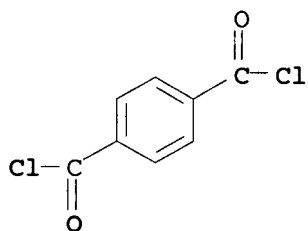
CM 1

CRN 122343-78-6  
CMF C21 H17 N5 O3



CM 2

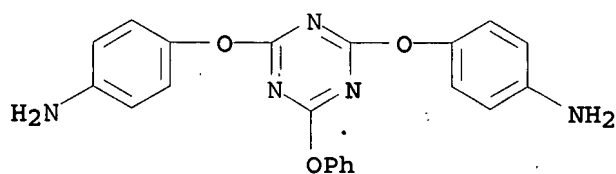
CRN 100-20-9  
CMF C8 H4 Cl2 O2



RN 122343-89-9 HCAPLUS  
CN Benzenamine, 4,4'-[6-phenoxy-1,3,5-triazine-2,4-diylbis(oxy)]bis-, polymer with 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

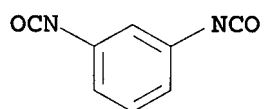
CM 1

CRN 122343-78-6  
CMF C21 H17 N5 O3



CM 2

CRN 26471-62-5  
 CMF C9 H6 N2 O2  
 CCI IDS

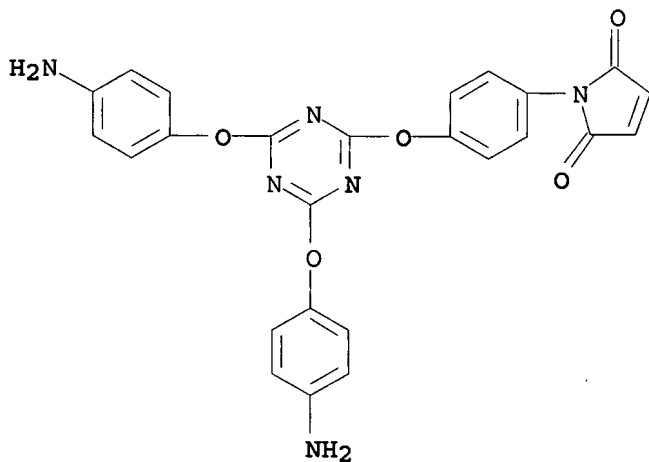


D1-Me

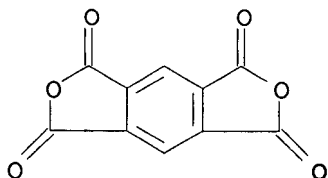
IT 122343-81-1P 122343-83-3P 122343-85-5P  
 122343-87-7P 122343-88-8P 122343-90-2P  
 122343-91-3P 122343-92-4P 122363-65-9P  
 (preparation and thermal stability of crosslinked)  
 RN 122343-81-1 HCAPLUS  
 CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1H-  
 pyrrole-2,5-dione (9CI) (CA INDEX NAME)

CM 1

CRN 122343-80-0  
 CMF C25 H18 N6 O5

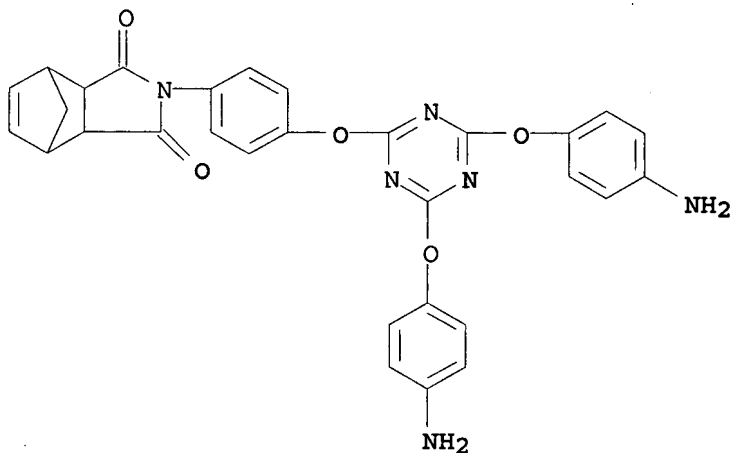


CM 2

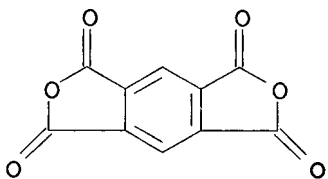
CRN 89-32-7  
CMF C10 H2 O6

RN 122343-83-3 HCAPLUS  
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
2-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-  
3a,4,7,7a-tetrahydro-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA  
INDEX NAME)

CM 1

CRN 122343-82-2  
CMF C30 H24 N6 O5

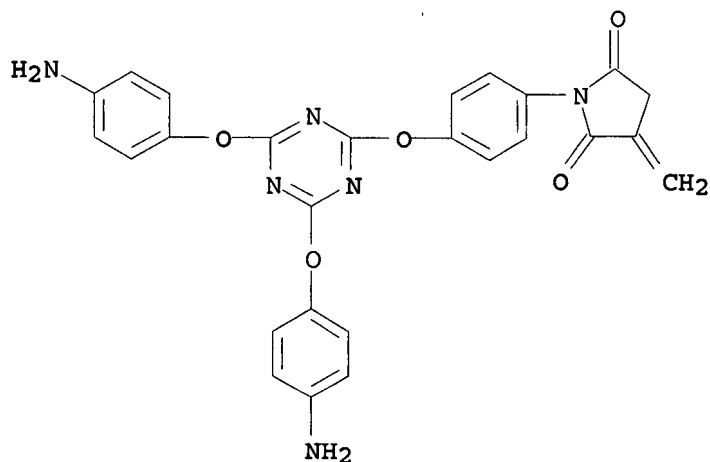
CM 2

CRN 89-32-7  
CMF C10 H2 O6

RN 122343-85-5 HCAPLUS  
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with  
1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-3-  
methylene-2,5-pyrrolidinedione (9CI) (CA INDEX NAME)

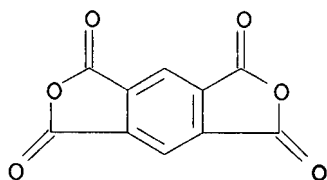
CM 1

CRN 122343-84-4  
CMF C26 H20 N6 O5



CM 2

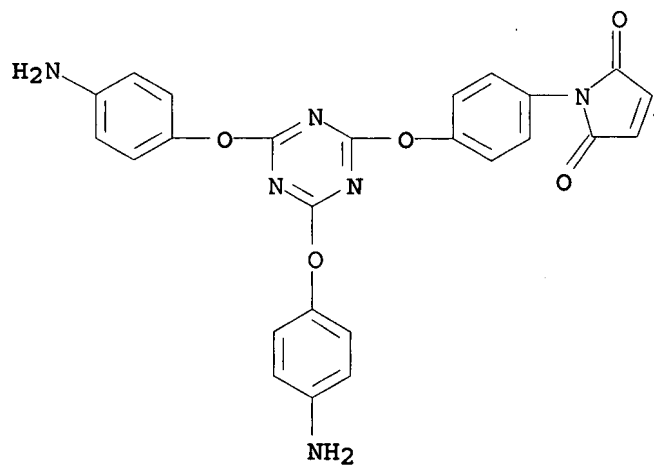
CRN 89-32-7  
CMF C10 H2 O6



RN 122343-87-7 HCAPLUS  
CN 1,4-Benzenedicarbonyl dichloride, polymer with 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-1H-pyrrole-2,5-dione  
(9CI) (CA INDEX NAME)

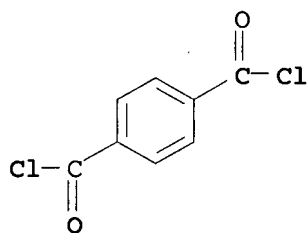
CM 1

CRN 122343-80-0  
CMF C25 H18 N6 O5



CM 2

CRN 100-20-9  
 CMF C8 H4 Cl2 O2

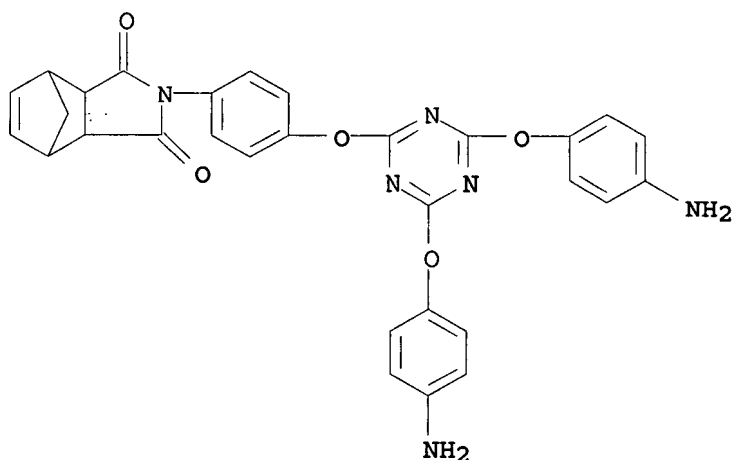


RN 122343-88-8 HCAPLUS  
 CN 1,4-Benzenedicarbonyl dichloride, polymer with 2-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-3a,4,7,7a-tetrahydro-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

CRN 122343-82-2  
 CMF C30 H24 N6 O5

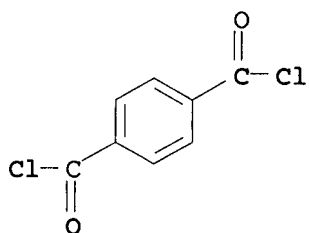




CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



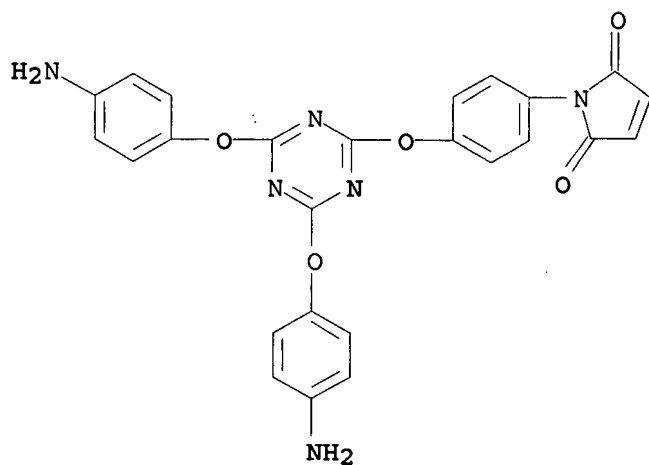
RN 122343-90-2 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-, polymer with 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 122343-80-0

CMF C25 H18 N6 O5

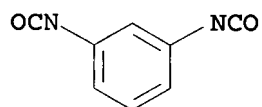


CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS



D1-Me

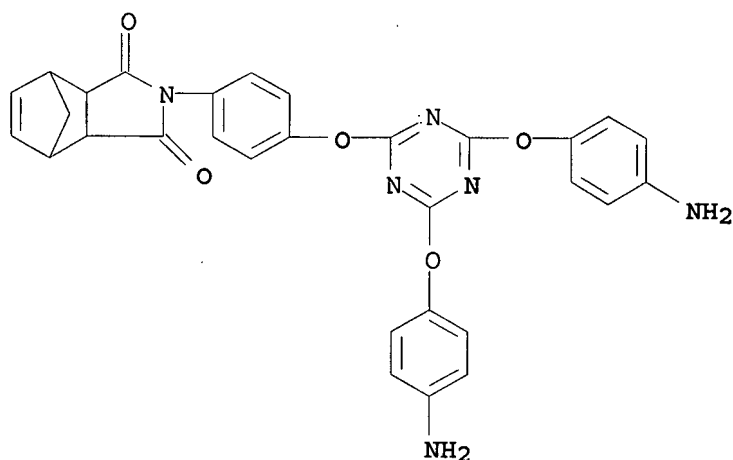
RN 122343-91-3 HCAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 2-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-3a,4,7,7a-tetrahydro-, polymer with 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 122343-82-2

CMF C30 H24 N6 O5

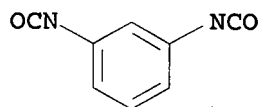


CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS



D1-Me

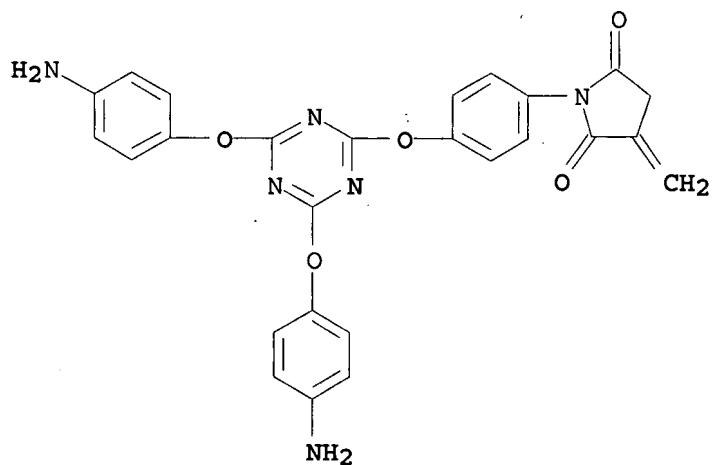
RN 122343-92-4 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-3-methylene-, polymer with 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 122343-84-4

CMF C26 H20 N6 O5

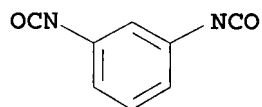


CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

CCI IDS



D1-Me

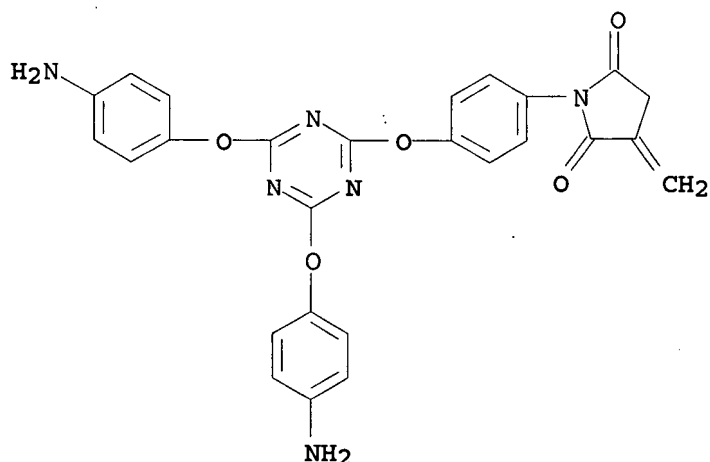
RN 122363-65-9 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1-[4-[[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]oxy]phenyl]-3-methylene-2,5-pyrrolidinedione (9CI) (CA INDEX NAME)

CM 1

CRN 122343-84-4

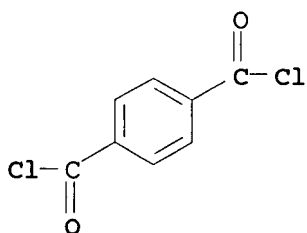
CMF C26 H20 N6 O5



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 35

IT 122343-78-6P

(preparation and polymerization of, with anhydrides, for polyamides and polyimides and polyureas preparation)

IT 122343-79-7P 122343-86-6P 122343-89-9P

122343-96-8P 122344-00-7P 122390-06-1P

(preparation and thermal stability of)

IT 122343-81-1P 122343-83-3P 122343-85-5P

122343-87-7P 122343-88-8P 122343-90-2P

122343-91-3P 122343-92-4P 122343-97-9P

122343-98-0P 122343-99-1P 122344-01-8P 122344-02-9P

122344-03-0P 122363-65-9P 122390-07-2P 122390-08-3P

122390-09-4P

(preparation and thermal stability of crosslinked)

L22 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:58119 HCAPLUS

DOCUMENT NUMBER: 110:58119

TITLE: Bis- or tetra-maleimides of substituted  
s-triazines chain-extended by imide, amide, and  
urea groups for fire- and heat-resistant  
applications

AUTHOR(S): Mikroyannidis, John A.; Melissaris, Anastasios P.

CORPORATE SOURCE: Dep. Chem., Univ. Patras, Patras, 260 01, Greece  
SOURCE: Journal of Polymer Science, Part A: Polymer  
Chemistry (1988), 26(5), 1405-18  
CODEN: JPACEC; ISSN: 0887-624X

DOCUMENT TYPE: Journal  
LANGUAGE: English

ED Entered STN: 17 Feb 1989

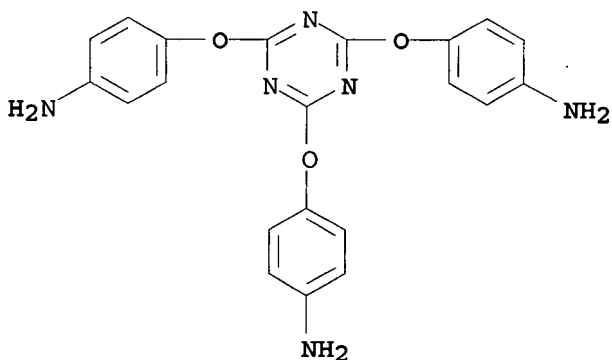
AB Novel phosphorylated bismaleimides and nonphosphorylated tetramaleimides containing substituted s-triazine rings (chain-extended by imide, amide, or urea groups) were prepared and polymerized. These polymer precursors were prepared by treating 2,4-bis(4-aminophenoxy)-6-diethoxyphosphinyl-s-triazine or 2,4,6-tris(4-aminophenoxy)-s-triazine with maleic anhydride in combination with a bridging agent such as pyromellitic or benzophenone tetracarboxylic dianhydride, terephthaloyl chloride, and TDI. The structure of polymer precursors was confirmed by IR and <sup>1</sup>H-NMR spectroscopy and their curing behavior was investigated by DTA. The phosphorylated bismaleimides thermally polymerized at a lower temperature than did the corresponding nonphosphorylated tetramaleimides. Dynamic TGA showed that the nonphosphorylated and phosphorylated cured resins were stable up to 320-370 and 312-327°, resp., in N or air atmospheric. In addition, the latter afforded a relatively higher char yield. The relative thermal and thermooxidative stability of polymers with regard to the chemical structure of the bridging group decreased in the order imide > amide > urea. Upon isothermal aging, the phosphorylated polymers exhibited a lower weight loss than did the corresponding nonphosphorylated polymers.

IT 22065-34-5 114166-89-1

(reaction of, with maleic anhydride and dianhydrides or terephthaloyl chloride or TDI)

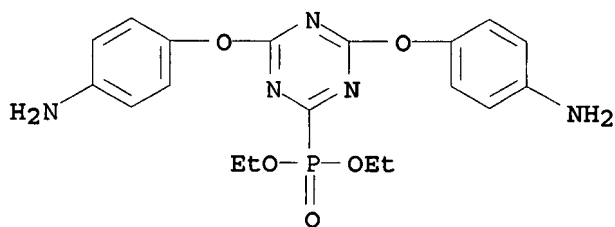
RN 22065-34-5 HCAPLUS

CN Benzenamine, 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris- (9CI)  
(CA INDEX NAME)



RN 114166-89-1 HCAPLUS

CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-, diethyl ester (9CI) (CA INDEX NAME)



CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

IT 22065-34-5 114166-89-1

(reaction of, with maleic anhydride and dianhydrides or terephthaloyl chloride or TDI)

L22 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:530075 HCAPLUS

DOCUMENT NUMBER: 109:130075

TITLE: High temperature phosphorylated or nonphosphorylated laminating resins based on maleimido-substituted aromatic s-triazines

AUTHOR(S): Melissaris, Anastasios P.; Mikroyannidis, John A.

CORPORATE SOURCE: Dep. Chem., Univ. Patras, Patras, 260 01, Greece

SOURCE: Journal of Polymer Science, Part A: Polymer

Chemistry (1988), 26(7), 1885-901

CODEN: JPACEC; ISSN: 0887-624X

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 14 Oct 1988

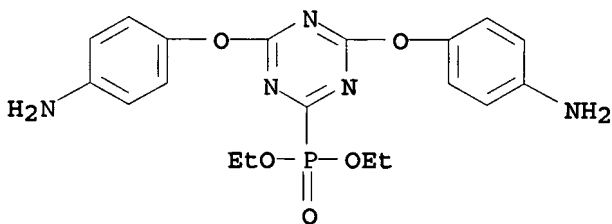
AB Several phosphorylated or nonphosphorylated maleimide or nadimide systems containing s-triazine rings were synthesized. They were thermally polymerized to heat-resistant laminating resins. Thermal characterization of monomers and their cured resins was achieved using DTA, dynamic thermogravimetric anal. and isothermal gravimetric anal. The cured resins were stable up to 304-330° both in N and air atmospheres and formed anaerobic char yield 49-59% at 800°. The phosphorylated polymers showed a lower temperature of initial weight loss but afforded higher anaerobic char yield than did the corresponding nonphosphorylated polymers.

IT 114166-89-1P

(preparation and polymerization of)

RN 114166-89-1 HCAPLUS

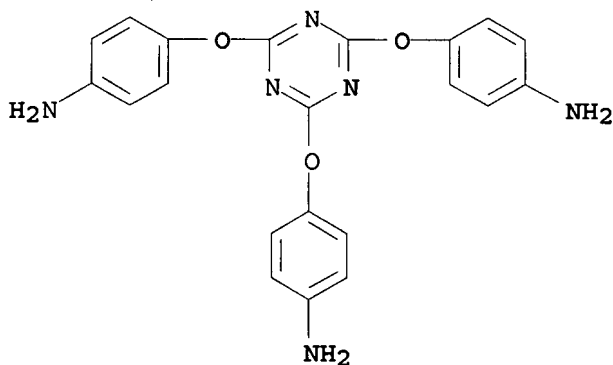
CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-, diethyl ester (9CI) (CA INDEX NAME)



IT 22065-34-5P

(preparation and reaction of, with maleic anhydride)

RN 22065-34-5 HCAPLUS  
CN Benzenamine, 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris- (9CI)  
(CA INDEX NAME)



CC 37-3 (Plastics Manufacture and Processing)  
IT 111939-91-4P 111939-96-9P 114166-89-1P 116343-44-3P  
116343-47-6P 116343-49-8P  
(preparation and polymerization of)  
IT 22065-34-5P  
(preparation and reaction of, with maleic anhydride)

L22 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:187354 HCAPLUS

DOCUMENT NUMBER: 108:187354

TITLE: Synthesis, physical and thermal characterization of phosphorus-containing homopolymers and copolymers based on 2,4-bis(4-aminophenoxy)-6-diethoxyphosphinyl-s-triazine

AUTHOR(S): Melissaris, Anastasios P.; Mikroyannidis, John A.

CORPORATE SOURCE: Dep. Chem., Univ. Patras, Patras, 260 01, Greece

SOURCE: Journal of Applied Polymer Science (1988), 35(3), 831-45

CODEN: JAPNAB; ISSN: 0021-8995

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 28 May 1988

AB Phosphorus-containing polyimides, polyamides, and polyureas were prepared by reacting 2,4-bis(4-aminophenoxy)-6-diethoxyphosphinyl-s-triazine with pyromellitic or benzophenonetetracarboxylic dianhydride, terephthaloyl chloride, and TDI, resp. These polymers were characterized by inherent viscosity measurements, IR and <sup>1</sup>H-NMR spectroscopy as well as by DTA and TGA. The copolymers were stable up to 233-272° in N or air atmospheric

IT 114166-90-4P 114178-71-1P 114178-72-2P  
114178-73-3P 114178-74-4P 114178-75-5P  
114178-76-6P 114188-50-0P  
(preparation and characterization of)

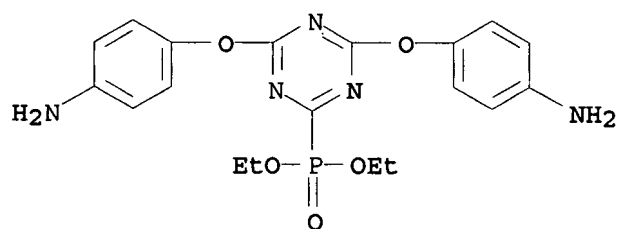
RN 114166-90-4 HCAPLUS

CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-, diethyl ester, polymer with 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

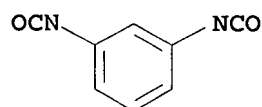


CRN 114166-89-1  
CMF C19 H22 N5 O5 P



CM 2

CRN 26471-62-5  
CMF C9 H6 N2 O2  
CCI IDS

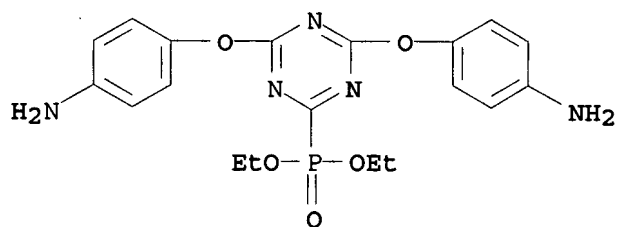


D1-Me

RN 114178-71-1 HCAPLUS  
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with diethyl  
[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phosphonate (9CI) (CA  
INDEX NAME)

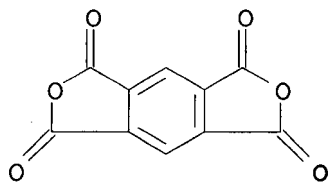
CM 1

CRN 114166-89-1  
CMF C19 H22 N5 O5 P



CM 2

CRN 89-32-7  
CMF C10 H2 O6



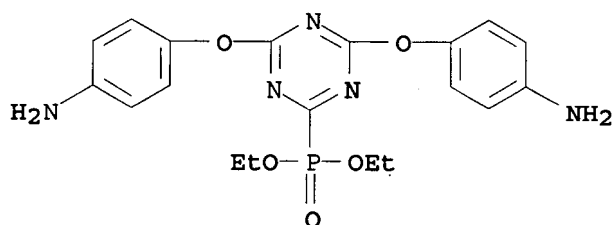
RN 114178-72-2 HCAPLUS

CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with diethyl [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phosphonate and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 114166-89-1

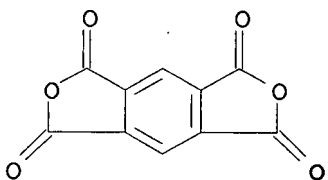
CMF C19 H22 N5 O5 P



CM 2

CRN 89-32-7

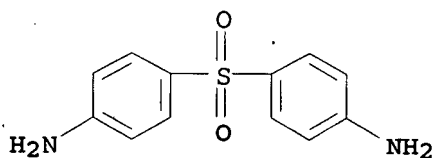
CMF C10 H2 O6



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



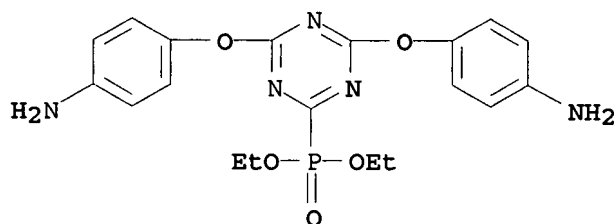
RN 114178-73-3 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with diethyl  
[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phosphonate (9CI) (CA  
INDEX NAME)

CM 1

CRN 114166-89-1

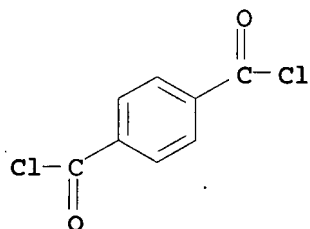
CMF C19 H22 N5 O5 P



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



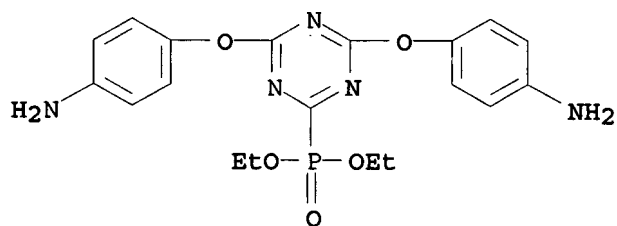
RN 114178-74-4 HCAPLUS

CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-,  
diethyl ester, polymer with 5,5'-carbonylbis[1,3-isobenzofurandione]  
(9CI) (CA INDEX NAME)

CM 1

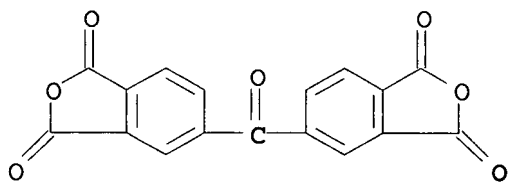
CRN 114166-89-1

CMF C19 H22 N5 O5 P



CM 2

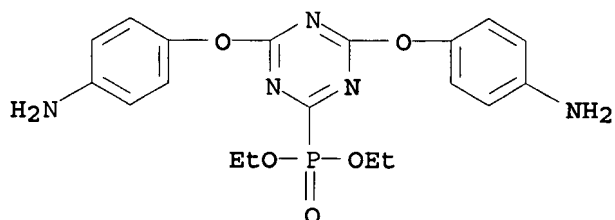
CRN 2421-28-5  
CMF C17 H6 O7



RN 114178-75-5 HCAPLUS  
CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with diethyl  
[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phosphonate and  
4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

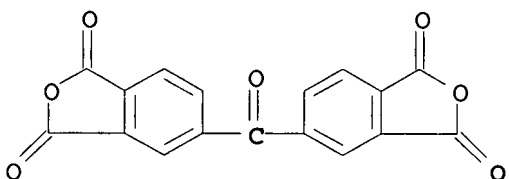
CM 1

CRN 114166-89-1  
CMF C19 H22 N5 O5 P



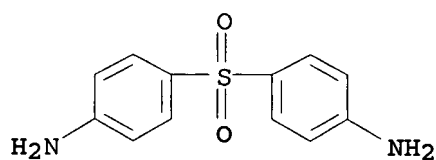
CM 2

CRN 2421-28-5  
CMF C17 H6 O7



CM 3

CRN 80-08-0  
CMF C12 H12 N2 O2 S



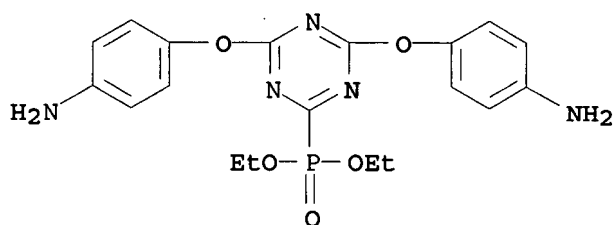
RN 114178-76-6 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with diethyl  
[4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]phosphonate and  
4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 114166-89-1

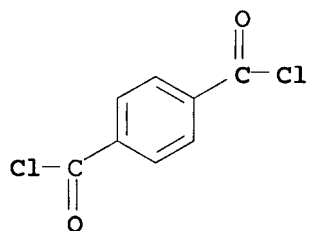
CMF C19 H22 N5 O5 P



CM 2

CRN 100-20-9

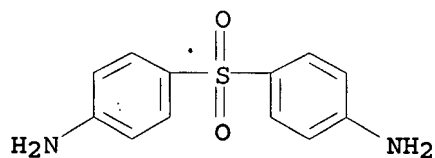
CMF C8 H4 Cl2 O2



CM 3

CRN 80-08-0

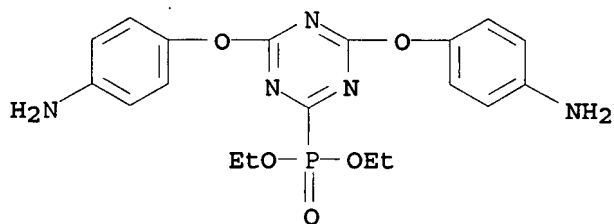
CMF C12 H12 N2 O2 S



RN 114188-50-0 HCAPLUS  
 CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-, diethyl ester, polymer with 1,3-diisocyanatomethylbenzene and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

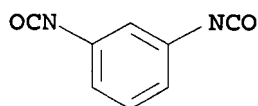
CM 1

CRN 114166-89-1  
 CMF C19 H22 N5 O5 P



CM 2

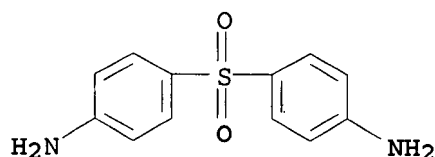
CRN 26471-62-5  
 CMF C9 H6 N2 O2  
 CCI IDS



D1-Me

CM 3

CRN 80-08-0  
 CMF C12 H12 N2 O2 S

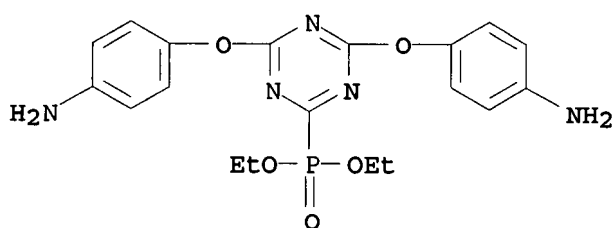


IT 114166-89-1

(reaction of, with acid derivs.)

RN 114166-89-1 HCAPLUS

CN Phosphonic acid, [4,6-bis(4-aminophenoxy)-1,3,5-triazin-2-yl]-, diethyl ester (9CI) (CA INDEX NAME)



CC 35-5 (Chemistry of Synthetic High Polymers)

IT 114166-90-4P 114178-71-1P 114178-72-2P

114178-73-3P 114178-74-4P 114178-75-5P

114178-76-6P 114178-82-4P 114178-83-5P 114178-84-6P

114188-50-0P 114265-73-5P

(preparation and characterization of)

IT 114166-89-1

(reaction of, with acid derivs.)

L22 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:6528 HCAPLUS

DOCUMENT NUMBER: 108:6528

TITLE: Polymerization of maleimides containing s-triazine rings in presence of aromatic di- or triamines

AUTHOR(S): Melissaris, Anastasios P.; Mikroyannidis, John A.

CORPORATE SOURCE: Dep. Chem., Univ. Patras, Patras, GR-260 01, Greece

SOURCE: Polymer Bulletin (Berlin, Germany) (1987), 18(1), 1-8

CODEN: POBUDR; ISSN: 0170-0839

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 09 Jan 1988

AB 2,4,6-Tris[4-(maleimido)phenoxy]-s-triazine or 2,4-bis[4-(maleimido)phenoxy]-6-diethoxyphosphinyl-s-triazine was polymerized with various aromatic di- or triamines. The maleimide-amine adducts initiated a thermal polymerization at lower temperature than did the corresponding neat maleimides. The thermal stability of cured resins was evaluated by thermogravimetric anal. The cured resins derived from the maleimide-amine adducts were less thermally stable than those of the corresponding neat maleimides. The initial decomposition temperature of the polymers obtained from the maleimide-amine adducts was not remarkably influenced by the chemical structure of the aromatic amine utilized.

IT 111939-95-8P 111940-00-2P

(preparation and thermogravimetric anal. of)

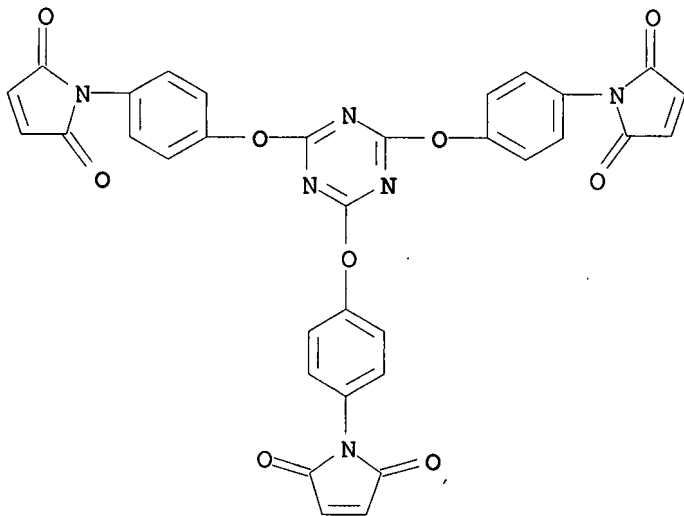
RN 111939-95-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1,1',1''-[1,3,5-triazine-2,4,6-triyltris(oxy-4,1-phenylene)]tris-, polymer with 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 111939-91-4

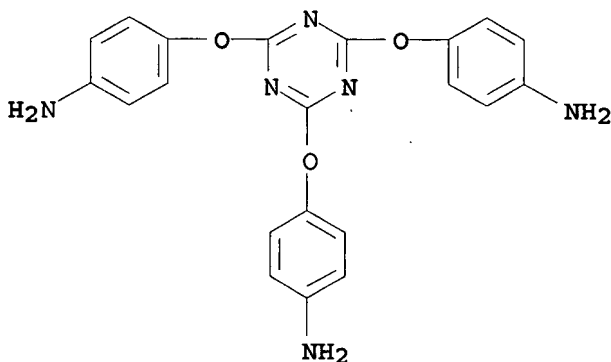
CMF C33 H18 N6 O9



CM 2

CRN 22065-34-5

CMF C21 H18 N6 O3



RN 111940-00-2 HCAPLUS

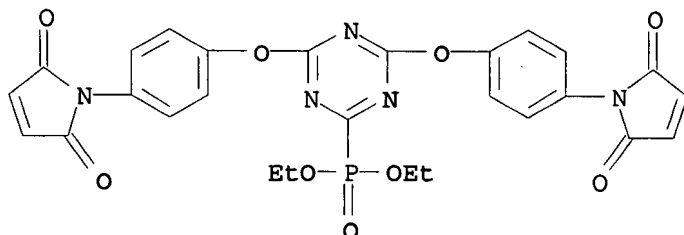
CN Phosphonic acid, [4,6-bis[4-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)phenoxy]-1,3,5-triazin-2-yl]-, diethyl ester, polymer with 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris[benzenamine] (9CI) (CA INDEX NAME)



CM 1

CRN 111939-96-9

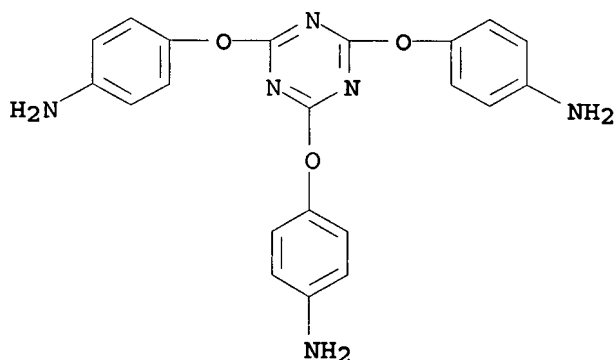
CMF C27 H22 N5 O9 P



CM 2

CRN 22065-34-5

CMF C21 H18 N6 O3



CC 35-4 (Chemistry of Synthetic High Polymers)

IT 111939-92-5P 111939-93-6P 111939-94-7P 111939-95-8P

111939-97-0P 111939-98-1P 111939-99-2P 111940-00-2P

(preparation and thermogravimetric anal. of)

L22 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:222069 HCAPLUS

DOCUMENT NUMBER: 102:222069

TITLE: Synthesis of polyisocyanate from cashew nutshell liquid

AUTHOR(S): Mahajan, S. S.

CORPORATE SOURCE: Div. Polym. Chem., Natl. Chem. Lab., Pune, 411 008, India

SOURCE: Indian Journal of Technology (1984), 22(11), 439-40

CODEN: IJOTA8; ISSN: 0019-5669

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 29 Jun 1985

AB 4-Nitro-3-pentadecylphenol Na salt [47452-48-2] and cyanuric chloride [108-77-0] were used to prepare tris(4-nitro-3-pentadecylphenyl)cyanurate [96550-09-3] which was converted in turn

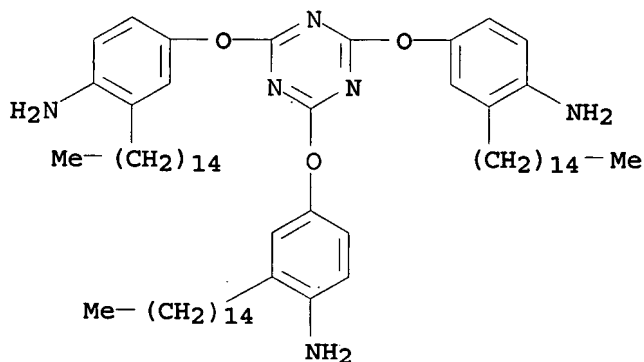
to tris(4-amino-3-pentadecylphenyl)cyanurate [96550-10-6]  
and tris(4-isocyanato-3-pentadecylphenyl)cyanurate (I) [96550-11-7].  
Textiles and paper were soaked in Cl<sub>2</sub>C:CHCl containing 2% I and cured 5  
min at 100° to impart water repellency and crease resistance to  
the materials.

IT 96550-10-6P

(preparation and conversion to isocyanato derivs.)

RN 96550-10-6 HCAPLUS

CN Benzenamine, 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris[2-pentadecyl- (9CI) (CA INDEX NAME)

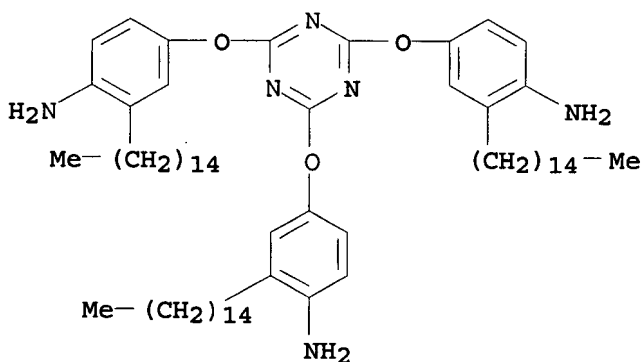


IT 96550-12-8P

(preparation of)

RN 96550-12-8 HCAPLUS

CN Benzenamine, 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris[2-pentadecyl-, trihydrochloride (9CI) (CA INDEX NAME)



● 3 HCl

CC 40-9 (Textiles)

Section cross-reference(s): 28, 35, 43

IT 96550-10-6P

(preparation and conversion to isocyanato derivs.)

IT 96550-12-8P 96550-13-9P

(preparation of)

L22 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1984:139711 HCAPLUS  
 DOCUMENT NUMBER: 100:139711  
 TITLE: Ordered heterocyclic copolymers. Polyamide-imides  
 with s-triazine rings  
 AUTHOR(S): Butuc, Elena; Gherasim, Georgeta M.  
 CORPORATE SOURCE: Inst. Macromol. Chem., Iassy, 6600, Rom.  
 SOURCE: Journal of Polymer Science, Polymer Chemistry  
 Edition (1984), 22(2), 503-7  
 CODEN: JPLCAT; ISSN: 0449-296X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 12 May 1984

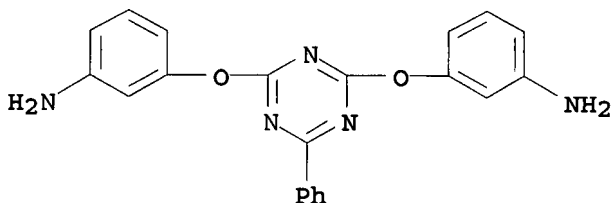
AB The title copolymers were prepared by treating aromatic diamines with 4-chloroformyl-N-(m-chloroformylphenyl)phthalimide and 4-chloroformyl-N-(p-chloroformylphenyl)phthalimide. The aromatic diamines that contained -NH- bridges were prepared by treating m-C<sub>6</sub>H<sub>4</sub>(NH<sub>2</sub>)<sub>2</sub> and p-C<sub>6</sub>H<sub>4</sub>(NH<sub>2</sub>)<sub>2</sub> [106-50-3] with 2,4-dichloro-6-phenyl-S-triazine (I) [1700-02-3]. The aromatic diamines that contained -O- bridges were obtained by reducing with Raney Ni and H under high pressure the corresponding dinitro compds. which were prepared by treating m-NO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>ONa and p-NO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>ONa [824-78-2] with I. The properties of these copolymers were characterized.

IT 89367-94-2P 89367-95-3P

(preparation and polymerization of, with chloroformylphenylphthalimides)

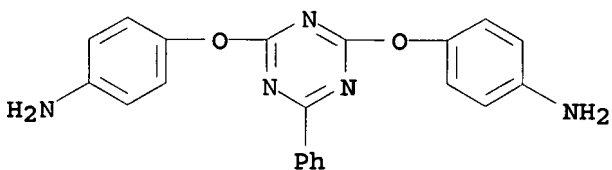
RN 89367-94-2 HCAPLUS

CN Benzenamine, 3,3'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis-(9CI) (CA INDEX NAME)



RN 89367-95-3 HCAPLUS

CN Benzenamine, 4,4'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis-(9CI) (CA INDEX NAME)



IT 89401-05-8P 89401-06-9P 89401-07-0P  
 89401-08-1P

(preparation and properties of)

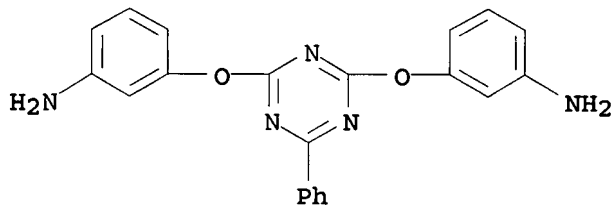
RN 89401-05-8 HCAPLUS

CN 1H-Isoindole-5-carbonyl chloride, 2-[3-(chlorocarbonyl)phenyl]-2,3-dihydro-1,3-dioxo-, polymer with 3,3'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 89367-94-2

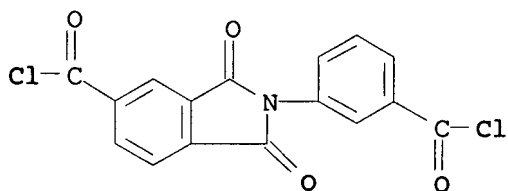
CMF C21 H17 N5 O2



CM 2

CRN 32605-68-8

CMF C16 H7 Cl2 N O4



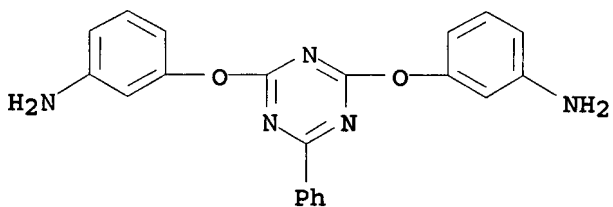
RN 89401-06-9 HCAPLUS

CN 1H-Isoindole-5-carbonyl chloride, 2-[4-(chlorocarbonyl)phenyl]-2,3-dihydro-1,3-dioxo-, polymer with 3,3'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 89367-94-2

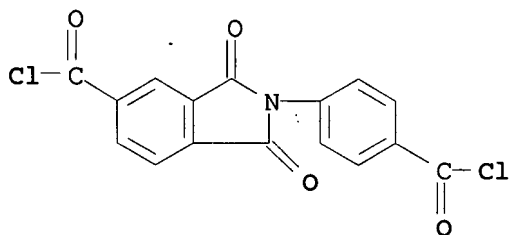
CMF C21 H17 N5 O2



CM 2

CRN 29747-29-3

CMF C16 H7 Cl2 N O4



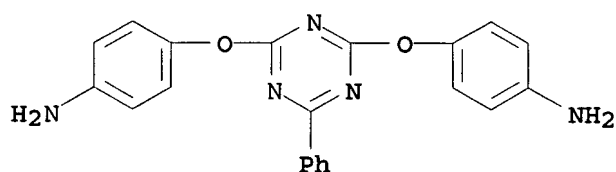
RN 89401-07-0 HCAPLUS

CN 1H-Isoindole-5-carbonyl chloride, 2-[3-(chlorocarbonyl)phenyl]-2,3-dihydro-1,3-dioxo-, polymer with 4,4'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 89367-95-3

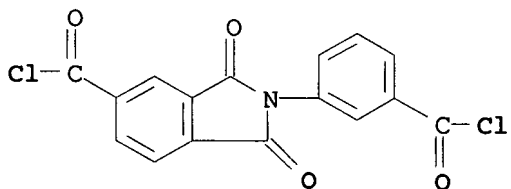
CMF C21 H17 N5 O2



CM 2

CRN 32605-68-8

CMF C16 H7 Cl2 N O4



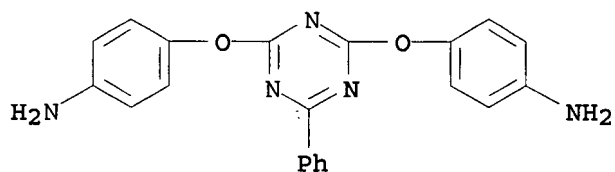
RN 89401-08-1 HCAPLUS

CN 1H-Isoindole-5-carbonyl chloride, 2-[4-(chlorocarbonyl)phenyl]-2,3-dihydro-1,3-dioxo-, polymer with 4,4'-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 89367-95-3

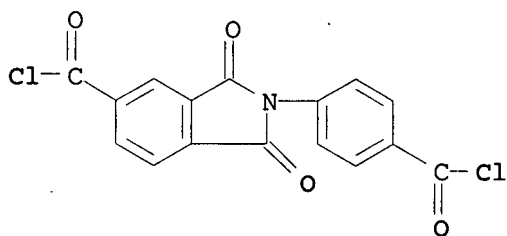
CMF C21 H17 N5 O2



CM 2

CRN 29747-29-3

CMF C16 H7 Cl2 N O4



CC 35-5 (Chemistry of Synthetic High Polymers)  
 IT 51815-23-7P 89367-94-2P 89367-95-3P  
 (preparation and polymerization of, with chloroformylphenylphthalimides)  
 IT 89359-94-4P 89359-95-5P 89359-96-6P 89370-10-5P  
 89401-05-8P 89401-06-9P 89401-07-0P  
 89401-08-1P  
 (preparation and properties of)

L22 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:110967 HCAPLUS

DOCUMENT NUMBER: 92:110967

TITLE: Syntheses of diisocyanates based on cashew nut shell liquid

AUTHOR(S): Ghatge, N. D.; Mahajan, S. S.

CORPORATE SOURCE: Natl. Chem. Lab., Poona, 411 008, India

SOURCE: Indian Journal of Technology (1979), 17(2), 55-7

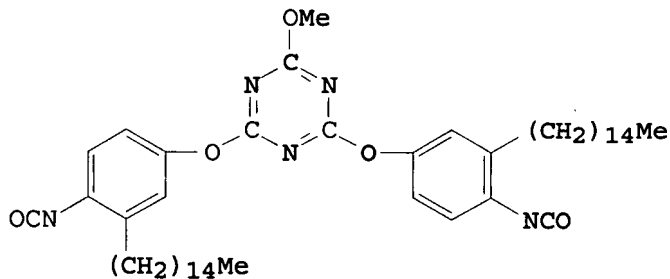
CODEN: IJOTA8; ISSN: 0019-5669

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 12 May 1984

GI



I

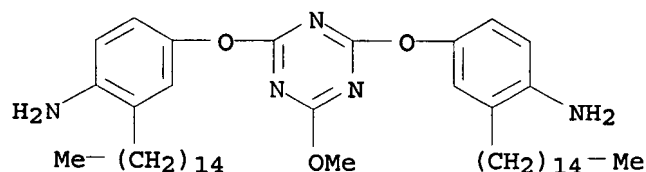
AB 6-Methoxy-2,4-di(4-isocyanato-3-pentadecylphenyl)cyanurate (I) and 4,6-diisocyanato-3-pentadecylanisole were prepared by different routes from nitro-m-pentadecylphenols, available from constituents of com. cashew-nut shell oil. The slow reactivity of I was discussed. The structures of 4,6-dinitro- and 2,4,6-trinitro-3-pentadecylanisole were assigned from their NMR spectra.

IT 72559-11-6P

(preparation and phosgenation of)

RN 72559-11-6 HCAPLUS

CN Benzenamine, 4,4'-[(6-methoxy-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[2-pentadecyl- (9CI) (CA INDEX NAME)

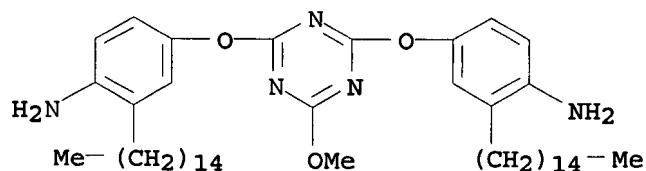


IT 72559-12-7P

(preparation of)

RN 72559-12-7 HCAPLUS

CN Benzenamine, 4,4'-[(6-methoxy-1,3,5-triazine-2,4-diyl)bis(oxy)]bis[2-pentadecyl-, dihydrochloride (9CI) (CA INDEX NAME)



● 2 HCl

CC 28-21 (Heterocyclic Compounds (More Than One Hetero Atom))  
Section cross-reference(s): 35

IT 72547-02-5P 72559-11-6P

(preparation and phosgenation of)

IT 72547-00-3P 72547-03-6P 72547-04-7P 72559-12-7P  
72559-13-8P

(preparation of)

L22 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1969:422116 HCAPLUS

DOCUMENT NUMBER: 71:22116

ORIGINAL REFERENCE NO.: 71:4081a,4084a

TITLE: Synthesis of tris(p-isocyanatophenyl) cyanurate

AUTHOR(S): Ghatge, Nanasaheb D.; Yadav, S. D.

CORPORATE SOURCE: Nat. Chem. Lab., Poona, India

SOURCE: Makromolekulare Chemie (1969), 124, 167-71

CODEN: MACEAK; ISSN: 0025-116X

DOCUMENT TYPE: Journal

LANGUAGE: English

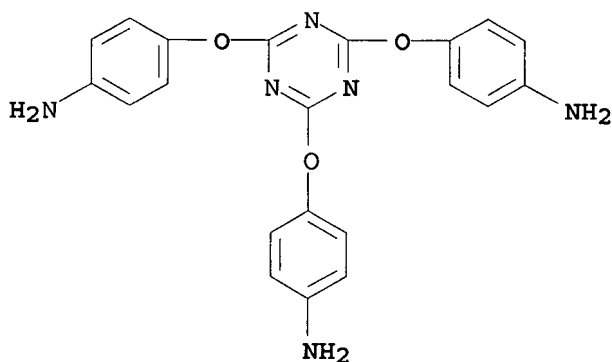
ED Entered STN: 12 May 1984

AB The title compound (I) was synthesized from cyanuric chloride (II) by treating II with the Na salt of a substituted phenoxide to yield the corresponding substituted cyanurate, reducing the cyanurate, and phosgenating. II (9.225 g.) and 24.15 g. p-NaO-C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub> were refluxed in a C<sub>6</sub>H<sub>6</sub>-Me<sub>2</sub>CO mixture in the presence of anhydrous Na<sub>2</sub>CO<sub>3</sub> to yield 44% tris(p-nitrophenyl) cyanurate (III), m. 210°. III (5.00 g.) was reduced in 500 ml. 1:4 dioxane-alc. mixture in the presence of a Raney Ni catalyst at 200 psi. H pressure and room temperature to yield 40% tris(p-aminophenyl) cyanurate (IV), m. 227°. IV-HCl, m. 270°, was prepared by passing HCl through an Et<sub>2</sub>O solution of IV. IV (1 g.) was dissolved in 20 ml. PhCl and treated with 60 ml. 13% COCl<sub>2</sub> solution in PhMe. After maintaining the mixture at room temperature overnight, the mixture was refluxed 2 hrs., treated with dry N for 2 hrs., filtered, and concentrated to yield 95% I, m. 170°. The Et urethane derivative of I, m. 214°, was obtained by refluxing an excess of EtOH with I. The stability of the isocyanate group was explained by the presence of the ether linkages between the Ph ring and the carbon of the triazine ring.

IT 22065-34-5P 22908-13-0P

(preparation of)

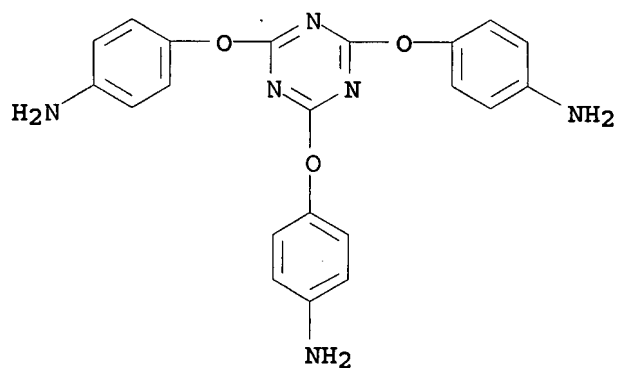
RN 22065-34-5 HCAPLUS

CN Benzenamine, 4,4',4''-[1,3,5-triazine-2,4,6-triyltris(oxy)]tris- (9CI)  
(CA INDEX NAME)

RN 22908-13-0 HCAPLUS

CN s-Triazine, 2,4,6-tris(p-aminophenoxy)-, trihydrochloride (8CI) (CA INDEX NAME)





●3 HCl

CC 28 (Heterocyclic Compounds (More Than One Hetero Atom))  
IT 1919-18-2P 22065-34-5P 22065-35-6P 22908-10-7P  
22908-13-0P  
(preparation of)

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(FILE 'HOME' ENTERED AT 13:09:17 ON 03 OCT 2007)

FILE 'HCAPLUS' ENTERED AT 13:09:25 ON 03 OCT 2007

L1 1 SEA ABB=ON PLU=ON US20060149028/PN  
SEL RN

FILE 'REGISTRY' ENTERED AT 13:09:42 ON 03 OCT 2007

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112-82-3/BI OR 1333-74-0/BI OR 69514-61-0/BI OR 775342-20-6  
/BI OR 775342-21-7/BI OR 775342-22-8/BI OR 775342-23-9/BI  
OR 775342-24-0/BI)

L3 STR

L4 50 SEA SSS SAM L3

L5 STR L3

L6 50 SEA SSS SAM L5

L7 STR L3

L8 50 SEA SSS SAM L7

L9 20404 SEA SSS FUL L7

L10 0 SEA ABB=ON PLU=ON L9 AND L2

L11 STR L7

L12 50 SEA SSS SAM L11

L13 37485 SEA SSS FUL L11

L14 5 SEA ABB=ON PLU=ON L13 AND L2

L15 STR L7

L16 4 SEA SUB=L13 SSS SAM L15

L17 67 SEA SUB=L13 SSS FUL L15

SAV L17 TEMP LIS671/A

L18 4 SEA ABB=ON PLU=ON L17 AND L2

L19 STR

L20 0 SEA SUB=L13 SSS SAM L19

L21 0 SEA SUB=L13 SSS FUL L19

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L22 18 SEA ABB=ON PLU=ON L17